

B.C. Lower Mainland Edition

August 1991

Volume 4 No. 8

The **COMPUTER PAPER**™

WESTERN CANADA'S COMPUTER INFORMATION SOURCE

NEWS • REVIEWS • FEATURES • EVENTS

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NETWORKING

A background image showing two hands, one from the left and one from the right, holding network cables and connecting them. The hands are positioned as if plugging a cable into a port. The background is dark and slightly blurred.

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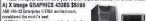
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386 / 486 COMPUTERS

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From the Editor



Commodity Markets

Big changes in the computer industry this month. Business buys Ashton Taito, Novell buys Digital Research, Apple and IBM agree to develop the operating system and components of the System. The Big Three (IBM, Compaq and Apple) are getting set to sell through discount superstores. We live in interesting times.

Networking

This month we focus on Networking. Longtime readers of the paper will welcome the return of Randy Green who writes our last article on networking. Randy, in addition to frequent writes for The Computer Paper in the past, has an article on wide area networks in the August edition of EYE magazine. Randy plans to write for us frequently.

Also featured this month are articles on running Windows under Netware, File Servers, Network Backups and Fax servers on networks. All of these articles should be useful anyone managing an MSDOS network these days.

Mac Stuff

On the Macintosh front, we have a look at WordPerfect's impressive, but not quite perfect, challenge to the word processing arena. Microsoft has a new release of Excel for the Macintosh, that should keep it ahead of the pack. They can look forward to competition from both Lotus and Corel later this year in the spreadsheet market.

It's all a matter of Syntax...

We also had a first look at Jan Wain, a new Windows-based, easy to use word processor "for the executive" and Q&A version 4.0, the latest incarnation of the best-selling DOS fax-to-fax database, both from Symantec.

Enjoy the issue.

Raj Singh Khosla
Editor/Publisher

Editorial Schedule

U.S. Editor Please call for Atlanta & Montreal schedule.

Issue	Topics	Copies	Covers Ready	Distribution
SEPT 01	Education & Training, Point of Sale	Aug 12	Aug 14	Aug 28
OCT 01	Word Processing, Windows	Sept 10	Sept 12	Oct 4
NOV 01	Utility Workstations, Hard Drives	Oct 14	Oct 16	Nov 1
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Masthead

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Cups and Ruffles

I recently picked up your July edi-
tion, and read it over, and over, as I
normally do. I usually enjoy your maga-
zine, and it has become one of those
things that I look forward to every
month. It's not exactly the high point
of my month, but has probably
become one of the more little things
which punctuate my life and make it
worth doing a good conversation with
a friend, a great idea, something while
taking a shower, the discovery of a per-
fectly good new little restaurant, a
money day at the racetrack with a new
or two as a bonus, and the day The
Computer Japan hits the street.

I've learned a lot...and much of
what I've learned has come from your
magazine. From some of the excellent
pieces by Beverly Shivers, and others in
your stable of fine writers.

However, I write you not only to
give kudos, but also to cry.

Sometimes I see your magazine...
while it may put the point of magazine
or that piece of hardware being
too relevant for the computer
industry generally. When a really dumb
idea appears on the keyboard line,
I'd be happy to hear your (or
someone's) opinion, and that it should be a
quick death. There are some really
ridiculously stupid ideas in the com-
puter industry which require a second
look. Computer magazines are like any
other: anything to make it look, and if

it's silly then maybe it's better. You
know what I'm speaking of. Little tiny
computer effects require a full point
to make the story. But to make
things for appearance is why take
longer to program the month's
appearance than you or I could do
on the back of a paper napkin at
Joey's. Come, during a quick lunch
break.

How about looking at the new "Two
Computers" The hard and soft hand
writing is so much more "better" (a
word which computer industry types
love) than keyboard-based computing.
I beg to differ. I taught myself at the
age of 17 to write with my own
hand, but I have not for too many a
year, and I haven't changed my opinion
since. What is this crap about "two
computers" when it comes to handwriting?
Handwriting is one of the simplest
things, and it's the only one that you
can't learn, and a certain way's machine
is my way of the world. For the most
part, it's a simple thing, give them a clear
between corner writing and keyboard
skills, and you'll be up with the good
quick young typists, no question.
That's the best. Some non-computer
magazines may do the keyboard
because they are keyboarding as the
proper way of typing, but the rest of
it is too little large words while they
put short and useless words with
their short word.

This day I can't find my computer
on, compare my thoughts, find my
name, then delete whatever I want to
do. Then please delete my name or I'll be



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What's New

Winix System Packs Unix Power into Windows 3.0

Winix, a series of applications which run under Windows 3.0, allows users to access UNIX networks from their PCs. The applications include Winix Manager, which gives administration access to files and MS-DOS and other Unix commands to be within the Windows environment, and provides for the storage of MS-DOS files on the Unix server. Winix System Administration, which simplifies the execution of system administration by executing Unix and network commands while remaining in Windows. Winix Mail, which allows standard Unix mail service by adding the ability to attach binary files in applications including listservs, spreadsheets etc. Winix Conference provides for the establishment of both open and closed real-time conferences. Winix Program Library which allows users to establish personal software program libraries for Windows, DOS and Unix applications.

Winix has also introduced three address modules to use with the basic system. Winix Toolkit, is a software design tool that simplifies the process of creating applications for use under Microsoft Windows. Winix Encoder, allows users to simulate virtually any open hardware or supercomputer environment or protocol. Winix Decoder is a file handling system and a relational database manager with a multimedia version.

Contact: Eric Budden, Toronto Canada (905) 489-2213 (1-800-940-7000)

Portables vs. Desktop PCs

A study on the productivity impact of laptop/portable computers versus desktop personal computers reveals some interesting facts:

- 80% of the portable computer users surveyed believe they complete tasks in less than 95 mins per hour, whereas those of their non-portable systems, and half say they are at least 25% more productive.
- 60% of the portable computer users would be dissatisfied if they had to go back to desktop PCs.
- 50% believe they complete projects more quickly than they would on a desktop PC.
- Interestingly, portable computer respondents reported having to put off their work because of lack of access to a PC almost twice as often as desktop PC respondents. Market researchers at Arthur D. Little Inc., who conducted the test, felt that this was because portable users were more confident in the potential of using a PC anywhere. One prevailing last opportunity was more frequently than the average desktop PC user (7% on the other hand, for the few who can't afford to leave their PCs at home...—EA)

Contact: Eric Budden, Toronto Canada (905) 489-2213 (1-800-940-7000)

Future Shop Sells Macs

Apple Canada has announced that customers in many Apple products have been awarded by the Future Shop and Quebec-based American Electronics Inc.

Recently, Microsoft Canada and LGI are on the floor at Future Shop.

Interestingly, our stores noted that Commodore Amiga and PC products are no longer carried by the franchise-based discount electronics chain.

Future Shop is that Apple Inc. place in the works to equiptize the US and Canadian prices (excepting the exchange rate and GST) by October. This would please many Canadian Apple dealers, who are suffering because of grey market.

Contact: Apple Canada, 416-510-1000

Octavo Updates TypeChart

MALDEN, B.C. JULY 12 (TCP)—Octavo has released an upgrade to its Macintosh typewriter cataloging utility, TypeChart, best time to registered users, who are also eligible for first follow-up support, limited 15 min. hours, week hours with System 7 and contains some new items, including TrueType support. The original TypeChart release received an excellent response for "Best Commercial Entry" in the last MacWorld SuperStarch contest. TypeChart 1.8 retails for \$69.95.

Contact: Octavo Productions Inc. 604-660-5276, 2010-5251-5761

Slave Driver v2.0: Live performance software

VANCOUVER, B.C. JULY 18 (TCP)—We're seeing a lot of bad press these days concerning the use of sequencers in live music performance. People are beginning to feel "threatened," in the "live" show they came to see is actually being run late clockwise from a computer. MIND-ONE MIDI has developed a system for the Atari ST/E that allows sequencer playback to follow what the musicians are playing, rather than the musician following a pre-programmed arrangement. This is the only package that users in the world of the performing musician to such an extent available on any platform, and is bringing many new users, as well as IBM/Mac owners to the Atari world. SLAVE DRIVER has a suggested retail price of \$299.95.

Contact: MIND-ONE MIDI Productions, (604) 444-4013, 444-4013, 444-4013, 444-4013, 444-4013, 444-4013

Getting the Computer Edge in Business

VANCOUVER, B.C. JULY 18 (TCP)—A new program designed to help business owners, managers and operators maximize computer power in business areas in Computer College. The Owner Development Program (Computers for Small Business) comprises 18 four-hour seminars and 90 hours of on-site training. Contact: Laura Ross, Capilano College, (604) 961-1411

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Continued from page 9

it runs a TI 38616 processor equipped
with an Intel 486 133C processor to
generate 15 MBPS (millions of bytes per
second) over a 16-bit data bus. "This card can also rendered ani-
mation, video graphics, full 3-D model-
ing in 480- or 640 Windows in second
speed," says Jones.

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The Electronic Bookstore

Fortunately available on the Internet are
electronic books (see "What's
New," May '91), the books on the
Electronic Bookstore are now available
as printed books from Barnes & Noble
(212-850-1111), Heflinger's Books (800-
7834) and the UBC Bookstore (520-
8413). Several of the Classics are
editions are also available from
Penguin's Classic Book Store (508-
4854). The subject matter varies widely,
from generalist (a favorite theme of
Dellinger's Last Lecture) to post-apoc-
alyptic (The Road Made That Stone, by
Keith Laik). Laik's method, in particu-
lar, makes for gripping, albeit distur-
bing reading.

Other material is somewhat lighter,
such as the guide from a collection of
"journals for the PC" called Electronic
Joke.

In one hand, my young son
is "poor," glad
I've discussed it with Dad.

and your father agrees
if you call to tonight
He will answer the phone,
and if anything changes
line or out on your own

—excerpt from the Letter From
Home, by Gertrude S. Smith

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NewsBytes

HDTV Graphic Editor for Macintosh Debuts

TOKYO, JAPAN, JUL. 9 (NR)—Tokyo-based software firm Nitek has developed a graphic editing system which supports video images created for high definition TV. The system, called Hyper-graphy, operates on Apple's Macintosh.

Hyper-graphy consists of the software, a memory board, and a control board. With this system, extremely cheap pictures can be taken into the Macintosh and edited. The software includes a technical editing feature that enables the editing and pasting of 5 dimension pictures.

The system is for the Mac type of high definition TV broadcasting, which is already broadcasted by NHK in Japan on an experimental basis. The Nitek spokesman says there is no plan to release a version for the American or European HDTV standards at present. However, the Hyper-graphy system can easily be adapted to such different systems. The firm may release systems for the other standards when broadcasting starts in those areas, he said.

Contact: Nitek, 41-3-3884-2371



SuperMac Claims Fastest Graphics Card

SUNNYSIDE, CALIFORNIA, JUL. 15 (NR)—SuperMac Technology claims to have released the fastest 8-bit color graphics card for the Macintosh II series of microcomputers on the market.

The SuperMac 8-bit EDQ and EDQ II cards are said to achieve an up to half a billion pixel-per-second graphics throughput.

The company claims the cards offer twice the price/performance of the Apple Display card 8-24 GC, but cost 20 percent less. The card retail for \$1,399 and will be available from July 15. Both support the new System 7.0 Macintosh operating system.

Pocket-Sized Fax/Data Modem From EMAC

FREMONT, CALIFORNIA, JUL. 15 (NR)—EMAC, a division of Everex Systems, has introduced a pocket-sized fax/data modem for the Macintosh called the EMAC 14/96.

The EMAC 14/96 offers a 2,400-bps modem combined with 9,600-bps Group II-compatible fax capabilities. The product single pass first covers and often both HST level 3 data compression and HST level 4 error correction. Also featured is an acoustic coupler port and adapter cable to allow for the connection to a pay telephone or hotel telephone that does not have an acoustical modular jack.

Using Finder or MultiFinder, fax transmissions can be sent or received as background using Aladdin's LaserFax communication software. Unlimited scheduled transmission capabilities are also included, along with custom fax directories of up to 500 numbers.

The EMAC 14/96 features a sound card and LED indicators and can operate on either a nine-volt battery or using the standard AG connector, which is also included.

For fax transmissions it can automatically generate a cover page and will accept received faxes into FGC, TIFF, or TIFX file formats.

Compatible with any Macintosh Plus or later system, the EMAC 14/96 retails for \$495.

Contact: EMAC, 415-663-2745

Ten X Intros Faster CD Input

AUSTIN, TEXAS, JUL. 15 (NR)—When Apple announced Quicktime, problems with the amount of storage space required to hold the vast amounts of video data—and problems with the speed with which that data is accessed—loomed large on the horizon.

Considering that one minute of video can take up to one gigabyte (GB) of storage space, computer disks (CDs) were large enough, but too slow, while hard disks were fast enough, but too small, and not portable so that the video output can be distributed easily.

Ten claims to have solved the problem with the announcement of its Optical Compression Unit (OCU), the OCU-500, for speeding up the reading and writing to compact disc (CD) write-once-read-many (WORM) and removable disks.

The company claims that the unit has many new features including hardware drivers that work with a SCSI hardware interface, so software drivers are unnecessary. This makes CD drives easily interchangeable on any computer platform. The unit also provides data compression on the fly, and data exchange of data to speed up performance.

Contact: Ten, 3141 390/92 8056, 312044-8568 fax 312044-9081

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Apple & IBM in Accord

NEW YORK, NEW YORK, JUL. 9 (NY)—This was a day in computing history. Architects Apple Computer and IBM Corporation have announced that they will form a joint subsidiary to develop object-oriented software to run on a variety of operating systems—a project that had been hatched at in the past few weeks.

The IBM-Apple agreement, which comes in the form of a letter of intent contingent on the execution of definitive contracts later in 1991, is also seen by industry analysts as a continuation to the successful alliance formed earlier between Microsoft, Compaq, and Digital.

Under the announced agreement, Apple and IBM will create a "jointly owned and independently managed" system software company. The software produced by the firm will be offered for sale for systems manufactured by IBM, Apple and other vendors.

The announcement specifically mentions the "Intel's x86, Motorola's 68000, and IBM's RISC System/6000 POWERPC architectures" as target platforms and states that Apple and IBM will "use object-oriented technology to future product offerings, as well as in current operating systems, ensuring that applications written for current operating systems, including AIX, OS/2, and Macintosh, will run in these new environments."

IBM and Apple also stated plans to further integrate the Macintosh into the IBM world by jointly developing and marketing operating and communications products to extend the Macintosh into the IBM "enterprise environment." Additionally, IBM and Apple will develop an enhanced version of AIX, IBM's version of Unix, which will support both Macintosh and OS/2/Model 900 interfaces.

Apple spokesperson Barbara Kersaw told Newsbytes that the AIX-oriented plans will not impact Apple's plans to release an enhanced version of A/UX, Apple's Unix version, early in 1992.

Apple and IBM further announced that Apple will adopt force single chip implementations of IBM's R2, 6000 architecture (also known as the RISC architecture). Motorola, Apple's primary supplier of chips for the Macintosh family, will work with IBM in developing a new family of the chips (which IBM calls the "Power PC" chips). Motorola will serve as a source to Apple, IBM and other vendors for these chips.

As the final element of agreement, the firms announced that they "plan to work together to create and license platform-independent software environments that will stimulate independent industry development of new multimedia technology."

The announcement concluded by stating that "Products resulting from these agreements are expected to reach the marketplace over the next few to three years."

Apple's Kersaw, commenting to Newsbytes on the agreement, said that, while Apple and IBM have agreed that they would release no further details until a definitive contract is announced, "Apple is extremely enthusiastic about the agreement. We have been talking to IBM for months and had many complimentary talks to be done on through this cooperation."

Kersaw went on to say "From Apple's standpoint, the agreement will allow us to move toward three previously stated goals. First, it helps us to expand our core Macintosh technology upward through the adoption of the RISC platform. Secondly, the adoption of this platform should make the entire Macintosh even more attractive to large corporations, a market in which Apple has always worked to expand its presence. Third, the agreement will provide for even tighter cooperation with larger system and that has been another of our goals."

Barbara Dwyer, publisher of *EDMOSCOPE*, told Newsbytes that she felt "that the agreement is an indication of the industry reacting to the perception that one or two companies have too dominant a role."

"It was commonly felt that Microsoft and Intel were in command of the direction of the industry. This perception was so prevalent that the Federal Trade Commission began investigation of both firms. We now have two of the major firms in the industry joining together to redress the balance," she said.

"I think that this is good for the industry as it prevents out that the firm is as powerful as everyone begins to believe. It may be confusing to users as it indicates that we may never have only one standard but I think that it also protects the user by encouraging diversity and innovation," she added.

Dwyer said that she also felt that the projected alliance is good for both firms. "The most important thing for IBM is that, probably due to its larger to John Allen's comments, it seems to regard itself as an underdog and is responding aggressively. It then, by action, is ignoring with the marketplace that another firm has something important of value which IBM can benefit from," she told Newsbytes.

"In agreement with GO, while important, was really a 'blessing' rather than an agreement among equals as this is. As for Apple, the agreement takes it out of the position of being isolated in a specific niche. It now, without growing up its strengths, becomes more of a mainstream alternative. The separate subsidiary approach both protects Apple's independence and provides it the ability to be a major player in developing a truly universal standard," she added.

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No Change to 88000 RISC Chips, Says Motorola

CHICAGO, JULY 27 (UPI)—Motorola has released a statement which apparently surprises rumors about a possible change in focus for the Motorola 88000 RISC (reduced instruction set computer) chip family.

Murray Coleman, GM of Motorola's semiconductor and memory technology group, said that Motorola and IBM have agreed to develop and produce the next-generation single-chip implementation of IBM's Power PC microprocessor architecture. But Coleman said, "I want to underscore Motorola's commitment to supporting the system vendors and those customers who have chosen the 88000 RISC MPU family." Coleman said the company has several support chips on development which will enhance the 88000's performance in high-end mainframe workstations and servers. The 88000 is the next-generation chip Motorola expects to introduce later this year.

Coleman also said that Motorola will continue to extend the 88000-chip family, citing strong market demand. He said the company will support the current 88000 and 88040 chips, as well as the upcoming 88060.

Contact: Motorola, 703-621-8000.

GreatWorks: Integrated Software From Symantec

CUPERTINO, CALIFORNIA, JUL. 12 (UPI)—Integrated software packages are extremely useful in enterprise tools for new computer users and those who need a specific application but do not want to pay top prices for a specialized high-end or market-leading product. Symantec's new GreatWorks is one such integrated package for the Macintosh.

GreatWorks contains a word processor, a spreadsheet, a database, a chart, a draw and paint graphics frontend, an e-mailer, and communications features, all in one package.

The software offers such features as multiple column documents in the word processor, over 80 chart configuration types in the chart feature, and a forms generator in the data base. Also included is a 100,000-word spell checker with custom dictionaries, and a 600,000-synonym thesaurus.

GreatWorks supports the new System 7.0 operating system, and requires a minimum of one megabyte of RAM and a hard disk. The product works with System 6.0.3 or later, and at least a Macintosh Plus. GreatWorks retails for \$59.

Contact: David Sarnowski, Symantec Corp., 408-240-1710.

Continued on page 24

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1 Business 386SX/5300 (5300MB)	\$12095.00
1 Business 386SX/5350 (5350MB)	\$12195.00
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Style And Grammar Checker Enhanced

NEWMAN, ONTARIO, JUL. 8 (NFI)—Phil Gommons Software has released Version 3.00 of The Grammarian Grammar and Style Checker for Amos 3.0 and 3.03d computers. Grammarian checks for more than 1,200 common grammar and style errors, the company said, and suggests corrections.

Version 3.00 of Grammarian can run as a desk accessory as well as from the desktop. When Grammarian points out an error, the user can request Grammarian, return to the word processor to correct the problem, then resume Grammarian. Grammarian will resume checking the document from the point where it was suspended.

Grammarian now highlights problem words and phrases with bold or red letters. Users can select which grammar or style-type problem reports are printed or saved to disk. The latest release also works with the new screen resolutions available on Amos's TT computer. Other improvements include faster problem-line loading, more accurate readability grade, fewer "false" problems, and improved compatibility with word processors, the company said.

Grammarian 3.00 is available now for \$299/US. Until August 31, registered users can upgrade to Version 3.00 by sending their original Grammarian diskette and a check or money order for US\$9.99 to Phil Gommons Software.

Contact: Phil Gommons Software, 810-823-6271

Professional Computer Centres in Rehearsal

CALGARY, ALBERTA, JUL. 11 (NFI)—Computing, operation of a chain of Professional Computer Centres across Western Canada, has gone into rehearsing. Toronto-based outfit Glenstar has acquired most of the company's work and employees.

Robert Lloyd, formerly president of Computing and now executive vice-president of Glenstar, told Newviews his company acquired heavily in acquisitions 60 segments into Eastern Canada over the past year. "These acquisitions did not run out probably, particularly in light of the economic downturn in Ontario and Quebec," he said. About 120 former Computing employees have joined Glenstar, Lloyd said.

Contact: Glenstar, 400-394-1777

IDC Canada Study sees 9% Growth in Single-user Systems

TORONTO, ONTARIO, JUL. 8 (NFI)—Segment of single-user computers in Canada saw five percent in 1990, according to a study by International Data Corp. Canada. The strongest growth came in scientific and technical workstations, with unit shipments up 25.5 percent.

Overall shipments of single-user systems, including personal computers and workstations, reached 731,400 units in 1990, IDC said. Revenues rose faster than unit shipments, climbing 30.2 percent to C\$2.615 billion.

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Borland to Acquire Ashton-Tate

SCOTT VALLEY, CALIFORNIA, JUL 19 (AP)—In a move that has shocked the software publishing world, Borland International has signed a definitive agreement to acquire Ashton-Tate Corp.

Under terms of the agreement, Ashton-Tate shareholders are set to receive a division of a share of Borland common stock having a market value of \$17.50 for each of their shares, provided that no less than \$2,500 shares will no more than 5,000 shares will be issued for each Ashton-Tate share.

Ashton-Tate has approximately 28.1 million shares outstanding, while Borland has around 15 million shares outstanding.

Although the agreement has been approved by both boards of directors, it still needs approval from each company's shareholders and the receipt of all required governmental approvals.

It is anticipated that the transaction will be outlined in Ashton-Tate's shareholders and accounted for as a pooling of interests, the accounting method that has gained so much notoriety through ADT's recent acquisition of NCR Corp. The transaction is expected to be completed late this year.

Financial statements that, as part of the transaction, Ashton-Tate has provided to Borland on a nonrecurring basis, exercisable under certain circumstances, to acquire five million additional but unissued Ashton-Tate shares, or approximately 11% percent of Ashton-Tate's presently outstanding shares, at a price of \$17.50 per share.

The merger agreement also sets that, if the transaction is not completed, under certain circumstances, Ashton-Tate or Borland may be required to pay a fee of \$12.5 million to the other.

Commenting on the proposed transaction, Philippe Kahn, Borland's chairman, president and CEO, said, "This transaction will allow us to provide a full range of software products from databases and spreadsheets to graphics and programming languages." He stressed the character of combining technologies on a variety of platforms. He wanted to protect customer investments in each company's products, including Paradox and dBASE products, and provide a smooth migration path to future technologies.

Ashton-Tate was not available to comment as Borland's announcement. It was not clear as *Wiredtype* went to press what plans, if any, Borland has for Ashton-Tate's U.S. and European operations. Sources close to Borland's U.S. operations tell *Wiredtype* and U.S. operations will continue as they are separate companies in the U.S. parent operation.

Borland/A-T Merger: dBASE Windows?

LOS ANGELES, CALIFORNIA, JUL 11 (AP)—In an announcement that rocked the database world and the software and entry in general, Borland announced its plan to buy Ashton-Tate (AT). The boards of directors of both companies approved the purchase, and now it hinges on approval of the shareholders and receipt of the required governmental approvals.

The move was a totally unexpected in the computer account totally unexpected for four reasons. The first is Borland has been thought of as a company that develops software for programmers, with its successful release of its C compiler and its development of Object Windows. The second was the fact that Borland's database product Paradox is in a market by itself since it is incompatible with dBASE.

Continued on page 29

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NEWSBYTES

Borland continued from page 19

language products. Third was Borland's announcement to develop its own dBASE compiler for Windows and compatible with Paradox in calls Turbo Connect (Internews, p.1, May 8, 1991). Fourth was AT's announcement some two years ago in the dBASE development conference that it would release the dBASE Professional Compiler (see Letter), product manager and the Professional Compiler for AT, was reported as saying in June that the product was not expected to be seen in form next spring for 4 to 6 months.

Third party dBASE compilers have been rapidly growing in market share over the last several years, including Microsoft's Clipper and Fox Software's Progress, among others. A dBASE compiler is a product that allows a programmer to write an application in dBASE, then compile it so it no longer needs dBASE to be executed, but can be copied on a disk and distributed like any other program.

With Windows 3.0 gaining popularity, a race has started for one of the major players in the database market to introduce a Windows version.

Although discussion has often gone with companies who are marketing dBASE clones about Borland's possible entry into the dBASE compiler market, the prospect has not been taken seriously. Larry Homendinger, president of Novastat, said at the Clipper Developer's Conference in Palm Springs in June that the Borland dBASE compiler announcement was just another company announcing another superior product.

However, this acquisition may change all that. Philippe Kahn, Borland's president, said, "Borland and Ashton-Tate are an excellent strategic fit and will have an exceptional opportunity with the technology and product breadth to meet customer needs in the DB. This transaction will allow us to provide a full range of software products—from databases and spreadsheets to graphics and programming languages—all designed for heterogeneous computing architectures on a variety of platforms."

Regarding whether Borland will combine its database product Paradox with dBASE language products, Marvin Latta, an dBASE consultant

and writer, commented, "My guess is they will keep supporting both Paradox and dBASE, in which are such great programs, and move to distinguish them over time. For real users it'll be a matter of which interface style they like."

"The craziest thing with dBASE IV is whether Borland can take its design and do a better implementation, like Fox Software did. Fox didn't make everything better, but they really improved the performance. I'm sure Borland is going to do things to make it easier to store data between dBASE and Paradox and other Borland products," Latta added.

Speaking of Fox, Borland intends the relationship with Fox AT started against Fox before changing Fox had released dBASE copyrights. The suit was thought to be ended when the judge ruled in preliminary hearings in December, 1989 that Ashton-Tate "invented" the copyright office by not disclosing that dBASE was based on dBASE, a language developed by Jet Propulsion Labs and in the public domain. This left dBASE III and III products without any copyrights. However, the judge reversed his decision in April of this year and now the case has to be tried.

Kahn said, regarding the acquisition, "We intend to protect customer investments in each company's products, including Paradox and dBASE products, and provide a smooth migration path to future technologies."

AT has also had some profitability problems. The company reported in February of this year that \$5.6 million losses were posted for its fiscal third quarter.

William F. Lyons, chairman of Ashton-Tate, said, "This transaction provides outstanding value for our shareholders and expands our ability to meet customer's current and emerging computing needs. Customers will benefit from our complementary products, data, distribution channels, sales force, customer global operations and Borland's experienced technology."

Borland officials said they expect to achieve economies of scale and significant operational efficiencies as a result of the merger.

Contact: Interne, Tel: 604-438-1424, Ashton-Tate, 311-525-9580.

Novell and Digital Research to Merge

PRIMO, UTAH, JUL 17 (PR)—In an agreement signed today, Digital Research has become a wholly-owned subsidiary of Novell, Inc.

Both companies benefit of direction under company deal, but it will require approval of Digital Research stockholders. The company says no dBASE users are expected in obtaining that approval. The merger is expected to be completed by October of this year.

Digital Research, headquartered in Menlo Park, California, registered such industry markets as the CPM operating system, DR-DOS and Concurrent DOS. Novell, Inc markets network

operating systems, and is the largest outside vendor in Unix System Laboratories, the developer of Unix System V Release 4.

Under the terms of the agreement, holders of DR common stock, convertible securities and options will be exchanged for \$13.50 worth of newly issued shares of Novell common stock.

In a prepared statement, Novell said it is responding to customer demand for tightly coupling network operating system software with desktop and local computer operating systems.

Continued on page 21

DRI/Novell

Bob Williams, president and CEO of DRI, said that the merger gives the company significant new market reach through Novell's relations with leading computer vendors, its presence in the systems integration market, and distribution, marketing, education and customer support resources.

Digital operates as a contracting cover in Minnesota where it develops graphical user interface technology and Novell's, a windows, networking and customer operating system for the Intel family of microprocessors. Novell is targeted at the point-to-point, industrial and process control systems market. IBM, DEC, TSC and Siemens all deliver Novell with their systems.

DRI-DOS is believed to have as much as 15 percent of the overall DOS market, and is available in several foreign languages.

Novell DRI stockholders had to approve the deal or DRI's board of directors decide to change that non-recommendation. DRI has agreed to pay a fee to Novell. The amount of the fee was not disclosed.

DRI, Novell Merger: A Threat to Microsoft?

COLORADO SPRINGS, COL.

GRAND, JUL 19 (S&P)—Industry watchers are now speculating on whether the Digital Research/Novell merger announced this week might be a threat to Microsoft's dominance in the operating system market. Most analysts say they don't think Microsoft will be hurt by the merger, but at very least, some Wall Street analysts Tim McCollum was quoted as saying that while the merger is an event for Microsoft, he doesn't think it's a major negative. However, McCollum does believe the merger will give Digital Research (DRI) additional credibility. Microsoft's (that operating system) is estimated to be installed on 70-80 million PCs, while DRI claims 30-40 percent of DOS sales. DRI estimated DOS sales 3 years to Microsoft.

A Microsoft spokesperson told reporters that the company remains very interested in working with Novell, and said DRI's DR-DOS "has been a valuable part of the industry." In a conference call Novell Chief Executive Ray Steneke told analysts and reporters, "I don't think this would change our relationship with Microsoft at all."

Analysis suggests several other factors at work in the industry might be a large threat to Microsoft's dominance of the operating system space. IBM and Apple Computer's agreement to collaborate on developing new desktop systems which could compete with DOS computers, and an agreement by

Continued on page 29

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IBM/Novell continued from page 22

Instead to purchase additional, paid-for RAM, with which Microsoft has said it plans to compete. Additionally, Microsoft has recently been the target of investigations by the Federal Trade Commission for possible anti-competitive behavior. While it isn't unduly likely for a long time before that way is settled, a ruling against Microsoft, which you could assume officials would share.

To confirm the operating system picture even further, IBM is promoting OS/2 release 2.0 will be a better Windows than Windows and better DOS than DOS, "presumably in no attempt to keep buyers from going to Windows. And Microsoft has said that Windows NT (a version of its New Technology operating system kernel) will be released next year with DOS and Windows applications interfaces, but without an interface to OS/2. Microsoft has said that OS/2 interface support will be available in an optional later and eventually in OS/2 release 2.0. Microsoft issued over further development of OS/2, release 2.0 to IBM, who has said the product would ship before the end of this year.

Observers suggest that if Microsoft faces a threat, of a loss of all sales, and just one, and the IBM/Novell merger is just the latest.

(NR)—PG Office Incorporated (PGOI) has announced at a shipping its T100A Network Adapter. The T100A is the first stand-out local area network (LAN) adapter with Fiber Distributed Data Interface (FDDI) performance of 100 megabit-per-second (Mbps), the company claims.

The T100A Network Adapter is a 16-bit ISA-bus compatible half card, that supports direct disk-to-disk communications without the need for a host, although star hubs are available, company officials said.

"We're excited about this because we can now get fiber optic performance at the cost of copper," John Ford, sales manager for PGOI, said. The T100A is priced at \$495 retail, which is less than half of other fiber optic and proprietary adapters that range in price from \$1,500 to \$3,000 per adapter, the company claims. Other line adapters also require the more expensive fiber optic cable, but Ford said the T100A adapters could be connected with "twisted pair" local area networks as probably already have in their offices right now.

The T100A Network Adapter is designed for the Novell network standard, and comes with the card, the software drivers and diagnostic test software for troubleshooting the network, he added.

Stephen H. Office, Tel. 619/273-1482, Ext. 273-1226.



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SAN DIEGO, CALIFORNIA, JUL 18

more Newsbytes on page 26

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NEWSWIRE

Continued from page 26

Microsoft's announcement, made on the same day, that it will ship OS/2 version 2.0 to its OEMs (original equipment manufacturer) sometime around the end of the year" caused IBM prices for OS/2 and reaffirmed Microsoft's commitment to MS-DOS and Windows.

In announcing the shipment schedule, Steve Ballmer, Microsoft senior vice president of systems software, said, "IBM, recognizing the speed with which customers are moving to Windows applications, is promising that the first release of 2.0 will provide better Windows than Windows, and has defined running Windows 3.0 applications as a requirement for OS/2 to succeed. We are pleased that IBM has taken to heart the need to do a great job of supporting Windows users in the first release of OS/2 2.0, but we believe IBM's commitment is very aggressive."

Ballmer continued, "Microsoft is the only vendor to supply OEMs with a full line of Intel-based operating systems—DOS, Windows, and OS/2. Microsoft will enable OEM customers to easily offer all three systems, and market forces can determine their respective success. Microsoft strategy and focus for the desktop remains centered on Windows."

Earlier Dwyer, editor and publisher of *Business 1.0*, commented, saying, "Problems resulting from the new software firm won't be available for a few years and it makes sense to support current systems. Let's face it, DOS is a single-tasking limited operating system

I doubt that the new firm will be supporting OS/2 either. Firms make a mistake when they try to protect the past. Windows is proving DOS and that's why it's a lot better than OS/2."

Contact: InterAction 210 758-3444

Microsoft to Ship OS/2 Version2 by End of Year

REDMOND, WASHINGTON, JUL 8 (UPI)—Microsoft Corporation is extending the contracts of OEMs (original equipment manufacturers) who are currently licensed to sell OS/2 version 1.0. The contract extensions will allow the OEMs to sell version 2.0 of OS/2 when it is shipped near the end of 1991. Microsoft said it extended the contracts in order that OEMs can buy components such as IBM in terms of pricing and availability.

Under the terms of a joint development agreement between Microsoft and IBM, IBM took over development of version 2.0 while Microsoft jumped ahead to start work on version 3.0. Microsoft's Steve Ballmer said that the majority of the version 2.0 code was already written before IBM took over the project.

IBM has said it will ship version 2.0 before the end of the year. The contract extensions will allow Microsoft's OEMs to ship at the same time. Microsoft previously licensed about 50 OEMs to sell OS/2 version 1.0, and Microsoft said it expects those OEMs would also offer version 2.0.

IBM is promising that version 2.0 will provide "better Windows than

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Windows 3.11. Bellcore and Microsoft are pleased that IBM has taken to heart the need to do a great job of supporting Windows users in the first release of OS/2 version 2.0.

Contact: Eric Hest, 301-245-0000

INTEL TALKS

Low-Cost 32-Bit Color Laptop PC from NEC

TOKYO, JAPAN, JUL. 15 (NS)—NEC has released a low-cost 32-bit color laptop personal computer in Japan. Called the NEC PC9801F, the machine is equipped with a thin film transistor (TFT) color liquid crystal display.

NEC's color PC displays 16 colors at one time out of a palette of 4,096 colors on the 9.4-inch color display. According to NEC, the display's images are as clear as those seen on a cathode ray tube (CRT) monitor. The PC has a 33 megahertz 80386SX processor and a 40-megabyte hard disk. There is also a 16MB RAM card version. The PC supports Windows 3.11 and the OS/2 operating system. The keyboard can be detached from the computer shell.

The base price of the low-end model is \$550,000 yen (\$4,500). There are a number of peripherals offered including a dot matrix printer and an external 100-megabyte hard disk.

Toshiba adds T2000 Notebook Models

IRVINE, CALIFORNIA, JUL. 8 (NS)—Toshiba Canada has announced it is adding three new notebook models, the T2000, T2000GX, and the T2000GX.

The new T2000 adds for \$2499 and is a 286, 17 megabyte (MB) computer with a 40 megabyte (MB) hard disk, weighing at 5.9 pounds and only 1.9 inches thick, the company said. Like all T2000 series notebook computers, that one has a built-in VGA display, Toshiba said.

The T2000GX is a 386SX, 20-MHz machine that comes with 2 MB of random access memory (expandable to 12 MB), and a hard disk, the company said. 386SX and 386SX models cost \$2499 and \$2499, respectively. Added is a 50 MB hard disk to the T2000GX, and it is equivalent to the \$2799 T2000GX, Toshiba said.

Toshiba Canada also announced price reductions of up to 37% for virtually its entire family of portables.

Contact: Bill Balfour, Toshiba Canada Inc. (416) 410-2624

Telcelcom Canada Offers Fast Data On Phone Lines

OTTAWA, ONTARIO, JUL. 8 (NS)—Canada's first voice data service can now send digital data over the public telephone network at speeds up to 56 kilobits per second, after Telcelcom Canada completed its expansion. The nationwide expansion of phone computers will be boosting that speed to 64 kilobits per second by the end of

the year. Telcelcom Canada's Tom Schoenkopf told Newsbyte that the network can now transmit a digital data signal and ensure that it is received over digital connections. In the past, for example, Telcelcom Canada could only promise that digital data could be transferred using a modem at speeds up to 4,800 bits per second without trouble.

The new capability will be useful for applications such as high-speed financial transactions, sending video conferencing, and WebTV selling services, Telcelcom Canada said.

The service is available in regular telephone rates.

Contact: Telcelcom Canada, 416-540-5028/5020

'Shrink Wrapped' Unix Software Begins In Fall '91

RUNYMWALE, CALIFORNIA, JUL. 15 (NS)—Unix software vendors and peripherals for the Unix operating system have not rejected the notebook sales and marketing channels for reaching end users that previously all other operating system-based software has rejected. Unix Consortium plans to change all that.

Unix Consortium has announced it is launching a notebook sales and marketing strategy focused on software and peripherals for the Unix personal computers (PC) and workstation markets.

The company claims that Unix PCs and workstations represent the two largest and fastest growing segments of the Unix market and have a U.S. installed base of nearly 1.5 million systems.

Unix Consortium said the products will be marketed through a 30-page four-color catalog containing photos and descriptions of the products offered. The company plans to send the catalog to 10,000 Unix end-users later this year.

Contact: Unix Consortium, Tel. (800) 512-1980 or (408)522-1500, Fax: (408)522-5100

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Local Area Networks

by Randy Green

Introduction

A LAN is a Local Area Network—a way of tying a group of personal computers in a single building together to let them share information.

What is a LAN For?

1. **File sharing.** A LAN lets many users share a single copy of a file stored on a central file server computer. For example, a lawyer's office might have a common pool of documents that the various attorneys can access and update.
2. **File transfer.** A LAN lets you copy files from machine to machine without having to cut tape duplexes.
3. **Application accessibility.** For example, a LAN lets anyone use the accounting software from any of the workstations. Even an off-the-shelf LAN-management program can be used this way.
4. **Application sharing.** A LAN lets two people use the same copy of the MS Word 5.5 word processing program. However, two people cannot edit the same document simultaneously

5. **Simultaneous typing into an application.** A LAN application program lets two people type into it at once. For example, two people could key general ledger transactions at the same time, with the program automatically reconciling these work as the two users do not interfere with each other. Note that only special LAN versions of programs allow simultaneous typing. Ordinary programs allow only one person at a time to use the program on a given set of files.

6. **Printer sharing.** Using a LAN, you can share one or more laser printers between several workstations. (If all you need is printer sharing, there are much cheaper and simpler ways to get it than using a LAN.)

7. **Electronic mailboxes.** You can type short messages and send them over the LAN to other people sitting at computers on other parts of the building. The nearest telephone is faster and more convenient, but a LAN e-mail system can take messages when people are away from their phones.

What is a LAN Composed Of?

A LAN is a combination of computers, cables, integer electronics, LAN management software and of course LAN application software. Unfortunately, it is impossible to talk about each part without making references to the other parts I have not yet discussed. If you have trouble understanding, try skimming, then coming back for a second reading.

Workstations

A LAN is made up of computers. There are two kinds, the workstations, usually owned by people, and servers, which are usually shared out to a dozen workstations. The workstation does most work for the person sitting in front of it. The server does work for the whole network of workstations.

In many business environments, MS-DOS workstations are usually intermediate speed AT, XT, or 386 586 computers. They might have 1 to 4 MB of RAM. They often have good-quality color or grayscale VGA monitors and high-quality keyboards, however even the cheapest XT's are sometimes used as workstations. They usually have no tape drives, 40 MB hard disk.

Servers

A server is a computer that serves all the workstations —, primarily storing and retrieving data from files shared

on to disks.

Servers are usually far 386 or 486 computers, 25 or 35 MHz. They might have 1 to 16 MB of RAM. They usually have only monochrome monitors, and monochrome keyboards. No one looks at or touches these much. However, they have tape drives, high capacity (3000 MB), fast SCSI or SCSI hard disks. In a very small LAN, you might get away with only an XT as a file server.

In very small LANs, a single machine can sometimes act as a workstation AND a server. However, serving no other network is a big job, not leaving much spare power to handle the workstation duties. Normally you would use such a server also in a workstation only in an emergency or for casual use.

Under heavy load, if there are 30 workstations and one server, each workstation can only consumed 1/30 of the server's resources. In practice it works out better than that, because most workstations are idle most of the time. As long as no other workstation is using the server, you can command 100% of its resources.

Servers come in the high-quality, heavy-duty machines variety, in serving this whole act, they do many times the work of an ordinary workstation computer.

Cables

The workstations must be connected with cables — often shielded twisted pairs or coax, but sometimes just cheap phone wire or even tapeworm fiber optics. Sometimes a single piece of cable routes from station to station, visiting all the servers and workstations. This is called a bus or daisy-chain topology. Sometimes there is separate cable running from a central place to each station. This is called a star. Sometimes the cables branch out repeatedly from a root place forming a tree. Some use the best cable but use the hardest to diagnose or replace problems.

If you have to run cables through walls or ceilings, routing it can be the most expensive part of setting up the LAN. At every branching point there are special fittings. Sometimes you also need metal back boxes such as hubs or repeaters. Planning the routing, cutting the cable and installing the fittings is a job best left to experienced workers. If the fittings are not perfect, you get electronic echoes on the net which cause transmission errors.

Good cable will cost about \$100 a foot. This sounds like a big expense, but the cost of installing it, at about \$45 per hour, overstates it. Usually building codes require you to use fire-proof plenum cables. It would be most disastrous to install ordinary cable, then have the building inspectors force you to rip it out and start over.

Adapters

A LAN adapter card looks much like a video card. One line made each station — both workstations and servers. LANmatic adapters have a con-

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handling the request package. Even if DOS has been checked, it can only upgrade one of them at a time. In addition, the methods DOS uses are incredibly inefficient if you have large files or large numbers of files the way a server does.

A LANtastic system will fail alone under the strain weight of a file package, but it is a candidate for small sets or lighter duty.

Novell Netware 3.11 V.1.1 & Netware 3.86 V.1.1
 Evaluation Edition
 System Requirements: Netware 3.86 V.1.1: 286 or 386 processor, 2 to 16 MB RAM, 30 MB Hard Disk, Netware 3.86 Server 3.86 V.1.1: 386 processor, 4 MB RAM, 70 MB Hard Disk, Windows/Windows NT/OS/2 processor, 5 MB RAM

Novel Netware 3.11 V.1.1 \$1,215, 12 user
 \$1,584, 16 user \$4,194, 32 user \$4,836
 Netware 3.86 V.1.1 \$4,094, 16 user \$4,736,
 32 user \$5,378.

Novell Netware

Novell was one of the first companies to build LANs. The big strengths of their Netware LAN management software are:

1. Most LAN software will work on Novell than on any other kind of network.
2. Novell is software only. You can select your hardware from across of different vendors, picking the exact

amount of power you need. You can use Novell, Ethernet, Token Ring or almost any other type of network hardware provided.

3. Novell sets can grow to maximum size.
4. Novell has automated several steps of interconnecting LANs — getting maximum performance out of the hardware, by using clever software.

There are three main problems with Novell.

1. It is expensive. It costs about \$200 to \$250 Canadian per station for the software alone.

2. It is complicated. Getting an existing LAN going to get your LAN working and keeping working.

3. It has a large RAM footprint (in the order of 4MB). Novell relies up as much RAM, you may have to work to determine your applications into your workstation. To run large applications, you may have to reboot to remove the LAN software to get enough RAM to run, then reboot again when you are done to reconnect to the LAN. However, if you have 16 or 32MB workstations with 2 MB or more of RAM and use QDOS/DOS 3.0, sometimes you can load part of the Novell software above the 4MB mark, freeing up conventional RAM.

Novell has simplified their product line to two versions of the software: Netware 3.11 series on 386s and 486s server computers. You can buy licenses for 5, 10, 50 or 100 users. Version 3.11 runs on 386/486 servers only. Version 3.11 takes advantage of the 386's mode of the 80386 for extra speed. You can buy version 3.11 for 20, 100 or 250 users. If you needed 251 users, you would have to buy a 500 user license.

Novell offers amazing speed, even with the more efficient hardware you might have first used for a starter LANtastic. The secret is Novell's stamped DOS altogether for the servers, though they still use it at the workstations. In this place, they wrote a new efficient operating system designed from the ground up to sit on a LAN server. It can easily handle many tasks at once. It moves files and with a high-efficiency directory system so it can find them rapidly.

Novell LAN Manager V3.10
 Evaluation Edition
 System Requirements: DOS Server: 80386 processor, 2MB 7.2 MB RAM, Windows/Novell Client: Windows, 80386 processor, 640 K, 1 MB local hard disk, Novell DOS client, 80386 or 80486 processor, DOS 3.1, 5 MB RAM, VGA/LAN Adaptor
 Price: 5 user \$1,215, 10 user \$1,584, unlimited users \$4,094. Company 486 processor 10 \$1,195

DOS LANs

OS/2 is a new operating system to replace DOS. Microsoft and IBM started from scratch to write an efficient, boot-processed operating system that could run multiple programs at once. In addition, OS/2 borrows the RAM hardware. In OS/2 you can turn programs that take up to 16 MB of RAM (Release 2.0 will support up to 4 gigabytes of RAM with an 80486, 32-bit machine).

Trying to make DOS act as a LAN file server operating system is a bit like asking your eleven-year-old grandchild to perform triple and figure skating jumps. She tries bravely, but is just a little too old.

Microsoft designed the OS/2 operating system from scratch, especially for complex jobs like setting up a server. Starting from common roots, IBM developed IBM LAN Server and Microsoft developed LAN Manager to add the specific LAN features to OS/2. An OS/2 file server can do more

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then just manage files for workstations, it can do computational tasks on their behalf as well. CompuServe is thus an especially important for keeping network traffic down to a dull roar. Consider the following examples:

You work in a sales organization. You are sitting at a workstation. You want to comb the entire database of 30,000 customers for the 50 or so people who bought more than \$1000 over the last six months. The traditional way to handle this is to have a program running in your workstation ask the file server to send you each client record in turn — all 30,000 of them over the LAN. Then your workstation program calculates the amount each bought in the last six months and makes a short list of the big purchasers. As you do this, your computer is not running any other file transfer because you have flooded the LAN with 30,000 messages, which is slowing everyone down.

If you had a LAN designed around OS/2, a clever programmer might have done it this way:

Your workstation sends a message to the OS/2 server asking it to send you the records of only those clients who spent more than \$1000 in the last six months. Since the server can do many things at once, it just sends off a task to go looking for such clients. As the server tasks finish the 50 big sales it sends them to the program running in your workstation. Most customers are no longer angry with you because this time you only triggered 50 messages over the LAN — the records of the big spenders. This comes handy a ripple.

Novell has it something similar to OS/2 tasks, called VAPs (Value Added Processes). What is the difference? OS/2 is meant for general purpose, then Novell OS/2 tasks are just ordinary programs. You can take any ordinary program and run it unmodified on an OS/2 server. In contrast, VAPs are proprietary to Novell. You cannot run ordinary DOS or OS/2 programs on a Novell server.

Novell has recently introduced a new improved form of VAP called an RLM (Remote Local Module), the version 3.11. They are more like multi-threaded programs than VAPs, viz, you can start and stop them without rebooting.

What is the catch? The problems with OS/2 and Microsoft LAN Manager are:

1. OS/2 keeps chugging. Microsoft used IBM code to make up their minds on exactly what OS/2 should look like in the. This means if you use OS/2, you have to keep running just to stand still.
2. OS/2 is complicated. You will need consulting expert help. This is less of a problem if you plan to write your own programs anyway because it is complicated. LAN Manager has a huge 128 KB RAM footprint. This size of overhead is only acceptable when all the applications too, run OS/2 instead of DOS.

3. OS/2 is still new. Software, like people and like stars, needs time to mature [to get the bugs out and to fine-tune the performance]. Also, there are not nearly as many off-the-shelf applications ready for OS/2 as there are for Novell.

IBM has created huge amounts of software to link OS/2 LANs with their mainframes. Later Novell OS/2 can work with various types of LAN hardware, including Ethernet and Token Ring. OS/2, used both on servers and workstations, teams well with Token Ring for large corporate LANs.

Based on the theoretical potential, OS/2 should eventually win out over all the other types of LANs. Up to now, OS/2 marketing has been cryptic and OS/2 has fallen the short of its potential. However, the foundation work is gradually paying off. The electronic arts, such as PCs, are about with talk of amazingly good OS/2 Release 2.0 beta test results.

Types of LAN Hardware

Your choice of LAN software may agree determines which applications will run on your LAN. Your choice of hardware determines how fast they will run.

You cannot mix and match LAN software with just any LAN hardware. Only certain magic combinations will work. For example, LANtastic works with LANtastic hardware or generic Ethernet hardware. Novell works with ArcNet, Ethernet or Token Ring.

LANtastic Hardware

It is a little confusing, because LANtastic is both a software LAN manager and also proprietary hardware. The details of how LANtastic hardware works are secret.

The hardware comes in two versions: the 2 megabit per second proprietary version, and the 10 megabit per second Ethernet version. The 2 megabit per second version comes with prebuilt-in 15 foot, 50-foot or 100-foot 4-conductor cables that are easy to install yourself. The 10 megabit per second version uses standard ThruNet Ethernet cabling, easier to cut.

You are best off talking to a consultant to help you decide which version is best for you.

ArcNet

ArcNet is one of the oldest types of LAN hardware. It was originally a proprietary scheme of the Datapoint Corporation, but today many companies make ArcNet-compatible products. ArcNet is a little slow, but it is free of major errors or instabilities. It is known for solid reliability. It is easy to diagnose and repair using protocols. It is a little less than Ethernet.

Ethernet

Ethernet LANs allow you to interconnect a wide variety of equipment including Unix, Apple and mainframes. You can buy Ethernet cards from dozens of competing manufacturers.

Continued on page 29

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ETHERNET

The competition means you will receive excellent bang for your buck. But, even more important, if your chosen vendor goes bankrupt in a few years, your investment in the LAN is protected. You can still repair, expand or upgrade the LAN with compatible equipment from other Ethernet manufacturers.

Ethernet comes in three flavors (Phoenix, Unshielded Pair (UTP) and Thicknet as notes of ascending price) depending on how thick the coax cabling is. The thickest cables can span a larger distance, but they are much more expensive.

Token Ring

Except for fiber optics, Token Ring is the most expensive type of LAN adapter. It uses either a shielded or unshielded twisted pair cable. The cost is only justified when you have heavy loads. You will find Token Ring in large corporations where huge LANs are needed to maintain computers.

Ethernet—Under The Hood

Ethernet LANs work by generally keeping the line (the cable) completely silent. Nobody says anything. If any station wants to talk to another, it just shouts out. During this time, other stations waiting to send messages just listen and wait for silence, then jump in as the first opportunity—like a verbal cocktail party.

You can probably guess what happens in the traffic jams. Sometimes

two stations will start to talk at once and neither can get through. However, LAN adapters have special hardware (CSMA/CD) which stands for Carrier Sense Multiple Access/ Collision Detect) to detect the collision, and they each back off a random amount of time, effectively allowing one of them to go first.

If traffic is very high, the frequency of collisions rises higher and higher and the response time becomes more and more. The net spends more time recovering from collisions than it does sending data.

When all this net time is a handicap, and help support systems HAD to get through an earlier free search either traffic there would. Ethernet's explosion in use. Every workstation has equal access. It has no way to discriminate between low priority and high priority traffic. It has no way to make scheduled guarantees of response time to critical traffic.

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Token Ring—Under The Hood

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least now; you have the right to speak." As soon as a workstation receives the token, it passes it on to the next workstation in line. Only the workstation with the token can speak. Every other station must remain silent. If a workstation wants to send a message to another station, it must wait patiently for the token to be passed to it. Only then can it send its message. Then it passes the token on.

This sounds like so much bureaucracy. What if only two stations wanted to talk to each other? They would each have to wait while the token circled its way around the other 100

stations before one could send a message; then wait again as the token made another circuit for the receiver to have the opportunity to reply. If you're interested in so the net, even when the stations were working as designed, you would have the cumbersome hassle of token passing.

Why then, endure this ordeal? It turns out it is not as inefficient as you might first think. The reason is, the path the token takes need not be a simple loop through all stations. You can arrange a pattern to give high-priority stations more frequent access to the token. You can also dynamically alter

the passing pattern to give the token more often to the most talkative stations.

Watch what happens when the trail first starts to meander. Imagine the worst case when every station wants to send a message. The process is completely orderly, with no lost time from collisions. The efficiency actually becomes higher as the traffic mounts because you spend less time passing the token to stations that don't want it. If you know the token-passing pattern, you can calculate the worst-case conditions and guarantee high-priority stations a level of service, irrespective of what the

other stations do. With tokennet, you cannot make such promises.

Not unlike a station familiar and "displeased" that token LAN stations watch each other and have a complex protocol to regaining a lost token, Token Ring is quite a bit more complicated than Ethernet, and as you might expect, the LAN adapter cards are correspondingly more expensive.

Which is better? Up to 50% leading Ethernet beats out Token Ring because it has less overhead. Above 50%, Token Ring wins because it wastes no time with collisions.

Security

Please do NOT skip this section. I write it probably for people convinced they have no need whatsoever for security.

When you have a LAN, you put somebody's files in one big pot. Unless you make special provision, anybody can look at and modify anything. Any user can easily eke through the electronic door and peruse papers of any other user, including the president, former company director.

There are four reasons for losing on security if not made a few steps.

1. **Landfill damage.** Perhaps you are one of those laissez-faire types who carelessly tosses old files instead of deleting and setting up destroying hard disks of files. If you go loose on a LAN, you could wipe out not only all your own files, but everyone else's.
2. **Prank.** If all employees know they had access to the accounts payable files, a few might be tempted to have the computer issue them a check.
3. **Prank.** If all employees know they had access to the accounts payable files, a few might be tempted to have the computer issue them a check.
4. **Malicious Damage.** If a disgruntled employee had access to all files, he could subtly corrupt them, so that by the time the damage was detected, there would be no claim back up left.

The ability to share files in a two-copied world. It also implies that the opportunity to corrupt or destroy files is also multiplied.

Passwords

The key to security is the password. Each user identifies him or herself with a password—a secret word that s/he keys when s/he first sits down at the computer. Each user has privilege to access only some subset of the files and programs.

When a user starts to use some particularly sensitive program on file, the computer forces him to enter yet another password. This is to guard against an intruder using a computer when the valid user has walked off leaving the workstation unattended, but

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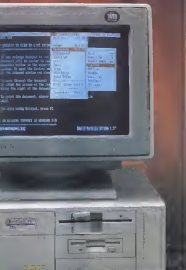
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Continued from page 87

logged on.

- The problem with passwords are:
 - People's brains rarely ever go to "states" of stored codes, initials or keystroke-like "flow" or "jargon." Ideally, passwords should contain some items from a phrasebook to make them harder to guess. Managers can monitor passwords and ask users to change any they view.
 - People write down their passwords. If an intruder finds out, it's written on bits of paper in a desk, he can be almost certain they are gone.
- There's not to change their passwords. If users change their passwords each month, a hacker who

steals

- Employees will happily change their passwords to anyone they consider trustworthy. When I worked at a large communications corporation, I could easily get users to give me their passwords just by asking for them. They would tell me so I could help solve their computer problems. It is difficult to get employees to cooperate to security. They perceive it as just a nuisance.
- There's not to change their passwords. If users change their passwords each month, a hacker who

cracks the password has only one month of snooping before the user changes again.

Administrator

You will need to designate one individual who will be the network administrator. His/her job is to manage the network, keep track of passwords, determine users in different files, set up new users, install software that is general broadband the system.

Backup

If a single computer breaks down,

your business will carry on as usual. If a LAN breaks down, you have chaos. Nobody can do anything. The entire company is paralyzed until the problem is resolved.

This means you have to get serious about backup, redundancy and power protection.

Backup means you must have a high-speed magnetic tape that has capability of backing up the contents of the network each night, preferably unattended until a single keystroke. You might use QIC, 4 mm DAT or 8 mm helical tape cartridges.

Backup also means redundancy. You are better off to have two modernized server computers than one good one. If one breaks down, you can keep going with the other.

Since a server failure causes much chaos, it pays to buy high-quality, heavy-duty equipment—especially the hard disks. LANs pay more disks a word mechanic. If you need to recover things along the installation or out the server, backup, you don't need many servers.

Power Protection

Nearly all programs will no longer submit except the files they are working on at the time of a power failure. For a local processor, this means you lose your backup since the last time you saved the file. For an accounting program it may mean you lose everything you typed since the last time you saved the file to tape. A power failure has a devastating effect on the whole company.

To protect yourself, place your servers on a UPS (Uninterruptible Power System). If the power fails, batteries will keep the server running for another 15 minutes—enough time to shut the server down gracefully without losing your files. In addition, a UPS isolates the server from the spikes and dips in the AC power. Without the UPS, these spikes might be sufficient to reboot the computer or cause it to temporarily malfunction. Such spikes or dips occur just as much now as a half-decade ago. Even worse, very large spikes could permanently damage the computer.

A clever UPS can tell the LAN manager to gracefully close down the files, when power fails, all without human intervention.

You can use a lower-cost SPS (Standby Power System) to protect yourself from blackouts, along with a filter to help clean out the noise from the AC supply. In general, many UPSes add no actual safety or defense. An SPS, on the other hand, does protect you from spikes and surges. Anything in the spec sheet "standing time" means you are getting SPS, not UPS.

Get Expert Help

If you buy a local company, you will be out at most a few thousand dollars. If you buy a major LAN, you may be out tens of thousands of dollars. Even if you buy a free-class LAN, if you

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Windows & NetWare

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So, let's do it. Get that package of Windows out, go to our NetWare workstation and type settings. When asked for a directory, type *Windows* and let the disks whir. If that's all it takes to work for you, send your quest into the *Golden Field of Knowledge*, buy as many lottery tickets as people will allow you, go into debt for, and start reworking.

two boxes. If instead of success you find your success printer connection or multi-tasking as you find the thoughtless never runs out or you get "Current locale just about anything" message, quickly and without anger delete your Windows directory, point out the **READ ME** files that come with your Windows directory, get in many back issues of an early magazine so you can get a hold of that have my reference to Windows and NetWare, make sure your Computer's network is active and get busy. The following are some items that may cause you to find certain qualities in the command line interface that you never have stated and lead you to specific matches that prove that NetWare, PC, Windows completing physics changes are much more likely to have grown up with DOS computers than Microsoft systems. There

are a lot of tips out there to fine-tune the operation of NetWare and Windows that are very specific and timely. What I will outline here are the essentials of getting NetWare and Windows to cohabit in its.

RAMNET

DOS doesn't know anything about NetWare, doesn't need to know, so if you are running DOS/Windows programs in your workstation, NetWare has to do the mediating because NetWare is DOS-aware, has to be because of that one thing. In each network workstation, a NetWare "shell" running as a TALK interface (DOS requests and transfers them to the NetWare file server). Windows works better with some shells than others. The preferred shell seems to be one called **RAMNET** where the last a

By Peter Dinkels

Enter Stage Right: Windows 3.11. Microsoft's latest and most successful attempt to take over the graphical face of computing.

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values to the DOS sector—e.g., XMSHEETS would be expecting that you are working with any DOS 3.3, as the workstation. Not only does Windows prefer the XMSHEETS shell, it also prefers the loose references. Call your vendor now.

Map Root

Windows and Windows programs like to stow away to the root of the hard drive, and when placed in a sub-work contains that practices with the same hard drive. This is not good for security reasons and as you often have to create a (lost) root to track Windows with the NetWare MAP ROOT options.

Set Temp

Windows likes to write things to a variety of places on the hard drive. As with the most directory problem above, some of these places are not particularly places where you want users to write things. Using the "set temp" command, you can redirect Windows and Windows programs to place their files in appropriate places.

Standard Mode

Windows runs in three modes—real, standard and enhanced. Real mode is pretty barebones, and enhanced can be tricky to set up, as well as slowing performance. Standard mode is in the same category (and is probably the one that offers you the best combination of ease of setup, reliability and performance). (For those who really want to do everything you possibly can with Windows, the enhanced mode is your

goal you'll want.

1. 1 MB with 4 meg of memory
2. DOS 3.3
3. a memory manager such as "MM" in the MAX from Quantum or QMEM from Quarterdeck

Performance Considerations

Load Hard Drive Windows does a lot of disk access. Running it from the hard hard drive can in certain circumstances worsen performance—mainly data files not kept on the server drive in this volume.

Warning: All you can afford. I may be a good measure.

Installation Method: Use the network method as found in the Windows Users Guide.

Test Bench: For some to state on Windows (such a chapter on Networking), Windows 3.11/2.11, by Norton Computer Books.

What's Noting: Works Call the guy in the Customer book of records.

When Everything Works: Looks real pretty.

Hardware: Needs to be 100 MHz 286/386 (or 486/586) with 1 MB RAM.

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Windows 3.11 Microsoft Corp. 200 Microsoft Way, Redmond, WA 98073-0001. Price: street prices under \$1000.

Notes: Windows is included in High Order Systems, a company that specializes in networks, (206) 405-2000, 2000-2000-2000.



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In this day and age you want to respond fast to your clients. You want to target the appropriate client where you want mail at any other information. The company system has all the information about products and customers already in ready and use it as well for sending faxes!

Reduced Postal Fees

If you send a fax of local mail, switching to fax can translate into substantial savings.

Security

If you have confidential incoming faxes, the Fax Gateway can be set up so the faxes will be routed directly to your station.

Save a Tree

For outgoing faxes, avoid printing a document and then faxing it. For incoming faxes, view your faxes on screen before printing.

Faxing Under Windows — How does it work?

All Windows fax screens allow information to be printed from within a Windows application and re-directed, without the use of any additional transport mechanisms, to the fax modem, which sends the fax to its destination. Once you have Windows 95 installed and working well, the process of sending a fax is very simple.

A) Before printing you select the printing device to be the Fax; this is accomplished from within the application or from the Windows system under the Windows control panel.

B) You just print the documents.

C) Once the printing process starts, the printout is converted to faxed format and a destination form pops up on your screen.

D) At this point you can enter the fax destination details, or choose to copy from a phone book; if so entered you can schedule the fax to be sent at a later date and time.

E) Now you can forget about the fax; it will be sent to its destination on the specified date and time.

Products

FAX2000 (Novell) Allen Computing, phone (800) 441-1118 fax (800) 441-1120

Simple Fax Gateway This package is installed with fax functionality. Its features are: support for multiple phone lines, specifying multiple fax numbers, forwarding or scheduling an email message to the fax screen, fax to faxed format, moving to any Windows printer, saving a fax in PDF, DOC or RTF formats, forwarding a fax.

For FAX2000 to run you have to install the local Communication Co-Processor or the local WinFax32/Novell send or recd. Once the hardware is installed you have to install the local software that comes with the card as well. This software loads as a TSR on your machine

before you run Windows. It uses only a 48K bytes of conventional memory if it uses expanded memory, and 96K bytes if it doesn't. Once FAX2000 is installed it runs pretty well as described above.

One note that can cause problems is support for different fax formats. In order to get the most out of FAX2000 you will have to understand how different faxes work under Windows. In the FAX2000 manual, Windows faxes are explained but not very well. However, in the July 1994 issue of *The Computer Paper*, Gordon Clark does a good job

explaining Windows fax's and Adobe Type Manager faxes.

One problem that FAX2000 has is that sometimes when printing received faxes to the Laser printer, FAX2000 builds them and the output was not very readable. The same has when viewed on the screen, or redirected to a fax machine looked good.

Novell Lotus Notes for Windows (Novell-Exchange.com Inc.) (416) 294-2000 system requirements require a CD-ROM drive to load, the Mail Connection Extension or other Lotus/Novell Collaboration features. All the info described for FAX2000 (each user can select a personalized logo for the cover sheet)

Novell's Open 3.1, 3.5a, 3.5b (Novell) (800) 441-1118

Novell was the first to release a fax server and is one of the first to release a Windows-based fax server. Its package is based on FAX2000. Novell licenses FAX2000 from Allen Computing, which at that time had in communication with its fax-server software. The interface for the user looks similar to the FAX2000 interface. A TSR TSR is loaded before Windows. This TSR depends on the Network you are running. For Novell it is called WFS_31X. The TSR allows the users to query the fax server for its

No Bull...

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increases with the addition of each new component. By definition, a network is a group of components working in one. Networks must efficiently trap each possible component failure and report it. Networks must efficiently report to all. Networks must accurately log applications and report the error directly to the user or report the error to the application, to help them learn. Networks to efficiency. If a file cannot be opened because of a sharing violation or other reason, Networks display the correct error over all applications. If a record of a file cannot be used because of a record lock violation, Networks correctly inform the application software.

A new limitation exists with Networks about the number of users. Networks are now sold in 5, 10, 20, 50, 100 and 250 user versions. This means that only the licensed number of users may be logged on at any given time. It does not limit the number of registered users on your network, just the simultaneous logins.

One key feature in Networks is the ability to connect machines using the same operating system into one network. Networks is rapidly moving in the direction with Macintosh, OS/2, and VMS. Using a Network file server, workstation can use local and other operating systems.

One should note that Novell is not shipping NETS.COM with their version of Networks. NETS.COM is the workstation shell for DOS 3. NETS.COM is only available with the DOS 3 upgrade and not the standard version of DOS 3. You can't install Macintosh too much as NETS.COM should be shipped with Novell. If you need NETS.COM, you can log onto RUTV and retrieve it from the "Business Software" menu.

V2.2 Versus V3.11

There are some significant differences between V2.2 and V3.11 that must be considered. First, of course, is price. The 20 User V3.11 costs the same as the 50 User V2.2. So if you need a lot of connections and you don't need the features of V3.11, V2.2 may be the way to go. V3.11 is a true 386 operating system that uses dynamic memory management in RAM and allows for bigger hard disks. V3.11 provides better security. You can lock users out of a single file if you need to.

Conclusion

It is very difficult to review the world's number one network operating system and come to any conclusion except that it is very good. Novell did not get to be number one by chance and neither did they simply advertise themselves to that position. Novell has put many years of effort into developing a safe, reliable, secure, functional and efficient operating system and they have been successful.

Just to be certain, consider what IBM thinks about Novell. Though Big Blue tells you and me that OS/2 is the future, they were once a lot of stick in the past (Novell). I think we can learn more from where IBM stands in

own money than what IBM advertises.

George Shultz is a senior partner with IBM Software Sales Corporation, a company specializing in independent testing, evaluation, and review of 386-based products. For further information, please call (616) 421-1171.

Will I Need Someone Full-time to Manage My Network?

As with any system, it depends on the size and complexity of your installation. Network, OS/2, and even your printer, as well as an RISC-based PC, do they're all the same. A network that's been properly installed and configured by a vendor that is providing you with a solution, and you're a lot of time, money, and effort. The same someone of administration (or even less) than any other type of multi-user system. I normally budget 1/2 - 3/4 person for a 20-user network during the installation and shakedown phases, and 1/8 - 1/2 person on an ongoing basis, depending on its complexity. That may change depending on the stability of your environment (frequent changes in staff or applications software mean more administration). If your vendor tells you less will time will be required, then your vendor is doing the work—and you're paying for it in annual support and maintenance fees.

by Rick Fisher, AT&T Systems (714) 714-0400

Fibre Optic network from page 49

Under consideration is another compatibility. This is similar to the situation 2 to 3 years ago with IBM's/T (Unshielded Twisted Pair) (UTP). Once the FDDI standard is set, more manufacturers will begin shipping compatible products, so mass production and competition will ultimately cause prices to drop.

Where Can You Use Fibre?

Fibre based Network Interface Cards (NICs) are available now with support for current topologies such as Ethernet, Token Ring and Arcnet. In the case, you take your distance and interference immunity advantages, but no performance improvement, since the manufacturers still adhere to the same transmission speed specifications as of copper network.

For network facilities containing servers and/or database engines where very high throughput is required, almost a FDDI one plant solution, but be aware that products available today represent the particular manufacturer's interpretation of the FDDI standard. Do not expect compatibility with products from a different manufacturer, and do not be surprised if you must upgrade in the future to be fully compliant with the final FDDI standard.

Mike Shultz is the Vice-President of Consulting Services with First Online Support Service, Inc., a computer consulting organization in Austin, Texas, specializing in computer networks.



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Protecting Your Data

by Mike Rapp

What do you do when you look at your network? A number of workstations and printers, one or many servers, perhaps a main or miniserver looking at the background, right? Wrong!

You are looking at the historical of your organization! Not the software, printers, or other physical components, but the information flowing through the network, accessible to staff so they can process orders, design products, manage inventory, or whatever it is that they do in order to make the company function, profitably.

If the parts break or are destroyed, repair or replace them. Simple. Lose the data, you are out of business. Equally simple, but much more dramatic.

What is a Backup?

Essentially, backing up data is like making a photocopy of it — make a copy of the data, generally to some form of removable media such as tape, then continue making changes to the original. If the original is lost or damaged, the backup copy can be used to **RESTORE** the original back to the point at which the backup was made. Any changes to the original since the backup are lost.

Why Backup?

A backup is the primary protection against loss or damage to data. Data loss occurs for two reasons — equipment failure and human error. Human error accounts for approximately 75% of problems, most often through accidental erasure of files, or improper procedures which result in corruption or inadvertent purging of data.

Computer hardware failures are rare, but in many cases destruction of the hardware or data corruption may be caused by external events, such as power loss or damage by fire or flooding water. If you consider how much effort it will take to recreate all the data stored on the network, backing up makes a great deal of sense.

Who is Responsible?

Personal computers brought freedom to the desktop, allowing users to design their own systems and be responsible for backups. Most, if not all, small business backups regularly at that, usually through file, but in time, even confidence was lost, with a standard file "insurance" (I'll back this up, I don't have time today). One big advantage of networks of personal computers is that backup is done centrally, by the Network Administrator. In addition, local data can be backed up by the network backup system. In any event, it is your responsibility to ensure that the information in your computer network is properly and adequately backed up. Let's take a look at various ways of doing this.

Online Backup

Although recently considered a "breakthrough" feature, the ability to "mirror" or "shadow" disk sub-systems is actually a form of backup. Systems which employ these techniques are protected from absolute hardware failure, such as a hard crash, but not from loss of data due to operator error, since an unacknowledged or corrupted file remains that way.

Local Backup

Copying the data elsewhere on the network is another alternative. In this scenario, data is in fact backed up to expand to another server or a local hard disk. This is fast and most convenient at times when a long process, such as month end, is about to be started, and the application area "thinks you backed up your data? Of course we all know "Yes" without really doing an external backup, since we are in a hurry, and saying, nothing has gone wrong with the month end process for months, so why bother? Murphy's law will get you, that's why. Also, you now have a copy on another system, should the primary system fail, you should be able to continue, perhaps less efficiently, using the backup machine.

External Backup

Copying your data to external, removable media is by far the most common, and best, backup technique. Tapes are the most popular media, but optical disks are up and coming, particularly for systems storage, where the media will not be erased, and you have a long shelf life. Floppies, due to their limited capacity, are not very useful, unless the volume of data is quite small.

The advantage of an external backup is that the backup copy can be physically removed from the system, and the pressure, preventing greater security from dropping.

How Big?

Selecting an appropriate media size and rotation cycle can provide months of protection with little effort and cost. Ideally, the backup process should run to completion without operator intervention. This means that a single tape cartridge must be large enough to store all the data. This includes operating system and programs (with the configuration and user's data), system data, and any data from local hard disks (if required) — ensure that the backup system supports this format if it is a requirement!

Most backup systems support the ability to schedule the backup automatically long after normal business hours, say at midnight. Thus the operator simply loads a tape cartridge, and initiates the backup before going home, it is done by the next morning.

If your "next" tape exceeds your tape cartridge capacity, either purchase a larger tape backup, or reduce the amount of data per backup each time, so that the process never is interrupted. For security, you can backup only the truly secure files each night, not

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by William Barr

History To Learn From

Remember OS/2? It was along with the PS/2 (and an operating system for both's computers). It was supposed to be the miracle operating system that would revolutionize personal computing DOS-shells.

Well, it didn't—quite now. In its time to develop for, the great managers never quite worked, it grabbed momentum, it was expensive and it was slow. With a startling degree of naivety, IBM wondered why the world wasn't rushing to its doorstep. The most recent (and highly rumored) version, 3.0, fixed most of the bugs, but I still wouldn't want to teach a sister.

However, it seems that IBM and Microsoft had a lot of a fight, recently in character. Microsoft took its lead and went home, leaving IBM building the leader. It seemed that the operating OS/2 development game was over. It was up to IBM. After all, Microsoft was far too busy building a DOS shell it likes to call a "special new version (NT)".

Thus left IBM in control of OS/2 development. To their credit, they went out most of the code and started from scratch. For the sake of brevity, they have produced a really impressive piece of software.

Backup *(continued from page 5)*

Once a month or, by entering an ASCII (i.e. human-readable) file or two in a backup tape which was used a week or more prior (i.e., don't just try last night's freshly written tape). Restore the files to a dummy directory (don't overwrite your current, live data) and type them to the screen. If consumers have a backup to a multiple tape set, be sure to attempt to restore a file from the second or subsequent tape, to check that the tape restore process correctly handles the situation.

A new style of backup using the advanced technology is just coming to market: Coded System Backups, the

First Impressions

For several weeks, I had a pre-release copy of OS/2 version 3.0. Apparently, there are about 20,000 copies of the operating system at IBM, so there are advantages of familiarity. The trouble I had (at the time of writing) was none, it didn't run. Presentation Manager's new Workstation Shell version 3.0, yet. Aside from that, it was a fully functional operating system with all the bells-and-whistles intact. Why that is, I don't know, but for to report any bugs or problems because they will probably be fixed by release time.

Having said that, I wasn't able to make it work, even. The first thing I tried was multitasking. I was able to run Lotus 1-2-3, Microsoft Flight Simulator, GEM/Win and IBM QuickView (such a DOS program) all at the same time. I could easily multitask various GEM/Win or, as well. Since OS/2 does preemption, multi-tasking (such as MS-DOS 5.0's multitasking). All the software was running smoothly. While reformatting a spreadsheet, I crash-bombed the system, with a Lotus taskbar and typed notes for this article in GEM/Win. Later, I loaded up Procomm and ran through a few BBS's. You might say it was enough to get my second.

(Continued on page 24)

new approach utilizes more network resources by delegating some of more backup PCs to do the network as the target of multiple PCs, saving on data transfer. In this way, the full network bandwidth, the combined speed of several data sources, and the combined speed of several tape drives is used to perform the backup at speeds substantially higher than the other source or workstation-based approaches.

Large amounts in particular will benefit from the increased flexibility, convenience and reliability of the new backup strategy.

Mike Wally is the Vice-President of Computing Services with Data Online Support Services Inc., a nationwide company specializing in installation, support, and training for computer networks.

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Excel 3.0 Tips and Tricks

by Dennis Bennett

Product: Excel 3.0 (spreadsheet)
Publisher: Microsoft Corporation, One Microsoft
Way, Redmond, Washington 98073-0933
Price: \$495

As mentioned in my Feb. '91 review of Excel 3.0, the program is capable of generating extraordinary graphs. All the tips mentioned here work on the new Macintosh version of the popular spreadsheet, and many also apply to the Windows version for the PC.

As I noted in my earlier review, the "killer" graphing feature is undoubtedly its graphical related analysis. The

function is as simple as clicking on a data point in a bar graph while holding down the Command or Control key. (To not select any/one program, double-click.) As seen in the bottom right of Figure 1, the middle point in the bar menu block. You can now drag this data point, instantaneously updating the data in your worksheet and any and all graphs of the data. 3-D charts or pie graphs are shown here.



To create the photograph like the CDs shown here, simply copy a picture to the clipboard, select a horizontal or vertical bar chart, and paste.

By double-clicking on a bar, you will be presented with a dialog box with options to stack or stretch the images. (The stack option is shown in this example.)

In Figure 2, below, you'll see one of many 3-D graph options present in Excel 3.0. Again a correspondence, these images have never been seen in any other, as with other graph types, just select a range of data in your spreadsheet, select "New" from the File menu, select Chart from the list of document types, pick a 3-D pie, bar or whatever not used in the one of the pie charts shown below, you can just click and drag the "slice" to separate them. To rotate the 3-D image, just choose 3-D View from the menu, and click on the perspective screen. How long can it be until animated charts and flying pie graphs invade our spreadsheets?

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A CHART IN A WINDOW



Use the Copy or Paste option, you could easily export a series of 3-D charts in PICT images to an animation program like Adobe® Director, Animation Works or Macromedia® Director. The object-oriented PICTs can also be pasted into virtually any other presentation, graphics or publishing program.

You can dynamically exchange data between programs, for example, also pasting an Excel chart into PowerPoint (etc.), you can edit the chart simply by double-clicking on the object. Excel starts, and you can edit the object using Excel! This works for data objects, too—not just graphs. Of course, the other applications must support these "embedded objects."

WordPerfect 2.0 for the Macintosh

A word processor worth switching to... or from?

by Glenn Besset

WordPerfect 2.0 (WPT) for the Macintosh is a significant improvement over the company's first try at penetrating the Microsoft Word-dominated Macintosh word processing market. The first time around, critics charged the company for a non-Mac-like interface, and poor performance. Now, with a completely redesigned interface and newly

enhanced feature set, how does WordPerfect stack up?

OK, hands up, all of you that have read stories that only tell you the good news! I could summarize WPT by saying "Impressive page layout capabilities (complete with integrated drawing tools), a spelling checker, thesaurus and extensive support and expert options may persuade many users to

Product: WordPerfect 2.0
Publisher: WordPerfect Corporation
Price: \$249.95
Requirements: Macintosh Plus or greater hardware

switched PC-and-Mac environments to Macintosh on WordPerfect.

Because WordPerfect is the top-selling PC word processor, the Mac version's ability to exchange files with its PC cousin is likely to weigh heavily on the purchase decisions of business users, which already on the PC version. But it is doubtful whether any programmer, no matter how good—could significantly impact upon Microsoft's ever-

widening dominance of the Macintosh word processing market. Other feature-packed high-end programs such as Paradox and Paradox Professional have made little difference in Microsoft Word's hegemony status, so it seems unlikely that WPT will enter the hearts and imaginations of the Mac marketplace. Nevertheless, WordPerfect 2.0 is the more capable program than Microsoft Word 4.0, and deserves a close look.

And it would all be true, but there would be a few things that you should know. Things that, surprisingly, I have yet to see in other reviews of the product (and I've read several). But, first, the good news...

It is easy to make a convincing case that WordPerfect is easily superior to Word as features alone (yep), but at least as important is how the program feels. Happily, WPT is a treat in this area, with some nice command shortcuts (for example, Command-S does a Select All, unlike Word's ridiculous Command-Option-M equivalent).

Places that Word slips up are well-known by WPT, such as its odd handling of date insertion. While Microsoft has never failed us in the fact that many users may want to insert the date in the form month, day, year, (i.e., June 1st, 1991), WordPerfect can insert the day in this form in either text, or a special date code that automatically displays the correct date.

I also found useful the magnification feature that allows you to zoom in and out of the document (as any percentage) while editing the text, images, graphics or other artifacts.

The graphics editor, while probably unnecessary to many users that already have a dedicated graphics program, is impressive in an integrated fashion. It allows the creation of object-oriented art with such features as Bézier curves, smoothed polygons, various fills and colors, rotated and stretched text, even a "top-down" perspective function. Graphics can be placed into text, grouped (into notes, labels) or anchored to (i.e., automatically floating with) text on the page, placed on an "overlay" layer, or locked in an overlay, so if the paper itself were watermarked. Many of these graphics-handling capabilities appear to be based on features found in the processing or layout features found in the processing or layout features of the program, and will, no doubt, show up in the forthcoming Windows version.

Although most of the usual block selection procedures are implemented, it is not possible to select a sentence or paragraph with by triple or quadruple-clicking, in with many Mac programs. These functions are, of course, available via keyboard commands or by dragging the mouse around.

I suspect that the major reason a business would choose WordPerfect for the Mac would be because they already use WordPerfect for the PC. One might reasonably suspect that the two programs would share some degree of command compatibility. After all, doesn't it make sense that a

I'd like Einstein's brain at a Jack Benny price.

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Continued from page 60

necessary or unnecessary window handles with WordPerfect for the PC (and who wouldn't) should be able to sit down at a Mac and know how to get around the program.

Also, this is not absolutely not the case. Unlike WordPerfect versions for the Amiga and Atari, which share command sets and function key compatibility with the IBM version, the Mac release is completely different. Although alternative command keys can be defined by the user, it would seem prudent for WP Corp to include a keyboard layout

that mimicked the PC-standard command-set level on a "rolling feature."

I sympathize with WP Corp's dilemma. In the last incarnation, WordPerfect for the Mac was criticized as "un-Mac-like." Now, with the Macintosh operating level up, here I am complaining that it's not-PC-like!

Luckily, the Mac version's interface is very good, much better, in fact, than the PC's, although both can apparently be bypassed if skills on the function keys for common operations. And, if you absolutely must have full keyboard compatibility with the PC version, you

may. More, with limited software manuals, the company had better not have any typos in the or changes to make! Fortunately, the books lay open reasonably well. The package includes five perfect-bound volumes: Getting Started, Reference, Macro, Drawing, and Workbook. Documentation, like real-time support, is WP Corp's forte.

Documentation and Support

The release marks the first time WP Corp has used so-called perfect binding for its manuals. In the past, long binders made updates as if changes

may. More, with limited software manuals, the company had better not have any typos in the or changes to make! Fortunately, the books lay open reasonably well. The package includes five perfect-bound volumes: Getting Started, Reference, Macro, Drawing, and Workbook. Documentation, like real-time support, is WP Corp's forte.

WordPerfect has probably got the best tech support in the world. Reportedly, the company's telephone system can handle over 1,000 simultaneous calls. Interestingly, when I called WordPerfect Corp's tech support line, the "hot-line" dial policy said that PC calls could expect a 30-second wait, while Mac users would wait 7 minutes—half minutes for an available technician! Of course, because the call and tech support are both free (even Canada, as the U.S., who was complaint? When I dial got through, I was treated politely and efficiently, although the technicians acknowledged that the 2.01 release did have some problems.



There Be Dragons Here

A spectacular set of supplied macro functions, including ones that create "pull quotes," text on a circular path, text on an angle, rectangular columns and tables, envelopes and mailing labels, give a wide variety of others, add to the program's appeal. Their disclosure is tempered somewhat by the fact that some of them cause glitches on the program. For example, the above-mentioned Pull Quotes macro did not display correctly in a document that had previously inserted the Strip Caps macro (the pull quote box was created, although the letters inside). Cutting a paragraph of text in the clip-board, opening a new document and inserting the Pull Quotes macro using the program as just occurred. At times, the "macro" pointer failed to change to an insertion point when clicking in the program's text window. At other times, errors reform problems would occur lines of text would be missing or displayed twice after deleting or inserting a section of text. Grrr!

A more serious flaw occurs when the program's Strip Caps macro is invoked. After the strip cap is inserted, the text and left margin are both pushed over, but it appears that the program's internal marking of the current position of the insertion point is sometimes set incorrectly. Highlighting or deleting characters produces unexpected, incorrect results.

Continued on page 68



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Figure 1

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Abstract

SEAN MARTIN

AccPac Plus Accounting

Product: Acrylic Fluoropolymer 6.0
Manufacturer: Compusteel Associates International Inc.
11100 Bulfinch Street, Vancouver, B.C. V6P 1G7
Phone (604) 273-2344
Fax (604) 273-2344
Price: \$475 per gallon
Off-inventor: The focus is on making steel tanks, as well as other accounting tanks, such as small manufacturing or medical equipment.

Figure 1

Accepac Plus is a mid- to high-range, full-featured accounting system for companies which have standard accounting needs. Accepac Plus is a customized database application that records your financial transactions. Transactions are entered under the appropriate accounts and reports are generated from these entries.

The first question is ask of an information package is whether it operates in accordance to GAAP (Generally Accepted Accounting Principles). The answer to the question is yes. This is the first rule to verify and ensure the first rule accounting package work. One must keep in mind that when it comes to accounting packages, not only does the package to meet flexibility and functionality, it also must follow GAAP. Sometimes there are requirements from public and one must comply. I was glad to say that from what I see of AICPA's GAAP version 9.0 the integrity of the system work well, yet the functionality and user interface has not been sacrificed.

Setting and Basis of Use

AcqTux: Flow installs from the diskette quite efficiently. There were no hiccups and the installation program was flexible enough to accommodate most configurations. AcqTux flow takes a system manager, if you have an other system manager, then it is a nice feature. If you are used to other system managers, then that will mean you work to you. You can purchase the windowing system manager which adds some functionality to the system, but I will prefer to use MS-DOS or Windows over the Computer Administrator of a server system.

In appearance this new version is the same as version 5.0. This particular training program is quite pleasing to the eye and gives you a quick visual picture of what you are in the program at any given moment. Once you are at a data entry screen, you no longer see the menu tree. This is that a graphical user interface has when it comes to accommodations; it means you can be assisted.

When using the windowing screen manager there is a Finder key and a smart Finder. These functions to make data entry quite easy when you forget things, such as an account number.

I have used Acclima Plus since version 4.0 and find the improvements in version 4.0 to be significant over versions 3.0 and 4.0. What a delight it is when you receive an update to a product that is already very good and you are frustrated with a few minor bugs.

over, there is not all of your comments about the product disappear on the new release. This is the feeling I had when I first loaded version 3.0 of Accrue Plus. I quickly went to each function I had complaints about in earlier versions, and found all my comments were addressed in the appropriate manner.

Support is a very important reason when it comes to an accounting package. Your accounting information is "mission critical" to the main thrust of your business. Customers must be satisfied from end product must be sold on account. Unless you know the current status of the account, you cannot sell on account. The reason you bought a computer in the first place for your accounting is that you need fast and accurate information. If possible, I have quick support for your computerized accounting system, you may as well not have one.

Computer Associates has two lines of support. Pay-per-page is all around maintenance. I do not recommend the pay-as-you-go option because in my experience, you can never get through on the phone. You will have better luck using the credit account here.

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The documentation is complete and easy to read. There are sufficient help guides to allow an experienced user to obtain the desired results from the package without reading the entire manual. The package is in line with all other professionally produced software packages.

Most standard accounting reports are available. One very exciting feature about Acc/Fac Plus is the ability to purchase third-party add-on products. One of these products is called Quick Reports, a very sophisticated report writer. If Acc/Fac Plus does not get you the report you want, you can most likely achieve it with Quick Reports.

Error Handling & Limitations

I was not able to crash the package and I feel the error handling is complete. Each time an incorrect entry is made, the package traps it and returns an error message.

AccFile Plus does have a history of corrupt databases. I do not think AccFile Plus corrupts databases any more frequently than any other database program. However, most other programs provide software routines to remove corrupt records for most common problems. The system managers will identify the problems with AccFile but not fix them. This has opened a small but successful industry in repairing AccFile Plus databases.

Depending on the complexity of your system and your computing habits, this can either be a big money maker or not a concern at all. Personally, after five years of using AcctFile Plus, I have never had a corrupted database (kerned on word). And those who have had the problem usually avoid the common of a database

Wordstar Laptop Collection

A Pick-and-Mix Surprise

by Catherine Labonte-Smith

Product: Wordstar Laptop Collection
Platform: Wordstar International Inc.
Wordstar has bundled five word processors along with other software packages for laptop and notebook computers. The package includes: Powerpoint (word-processing program), Lotus (the word processor), Wordstar (a word processor), and Mailer (for managing letters and mail).

While I explored the Wordstar Laptop Collection package I had a feeling like that I experienced as a child when I would open up a gift box of candy candy. Like everything lovely, this bundle of software contained some pieces that I enjoyed and some that I wouldn't have chosen for myself but were pleasant all the same.

All of the software runs very well on a desktop computer, but to be authentic, for review purposes, the software was installed on a laptop computer. The installation of these programs was quick and painless, as the companion programs to Wordstar were only one disk each and straightforward.

Wordstar

The word processor includes all of the standard features: thesaurus, spell-checker, multiple text windows, page layout options and macros. However, the documentation was not spread in quality in the days-to-come that comes with competing word-processing packages, it is now limiting a computer-aided guide to using the program. The alphabetical reference index and the perfect reference book would not be informative enough for a novice user.

A companion program to Wordstar would be Microsoft Works, which includes a spreadsheet and database that Wordstar doesn't. Neither the Wordstar drawing program nor the wordstar program was included in the total package and would have to be added on.

LapLink

LapLink did not come with the

AccFax software from page 64

replay emergency over and over again. The physical limitations of the package have been increased from 40,000 records to 4,794,847,398 records, that is an improvement that only the largest of companies will benefit from, but it is not to know you have lots of money to grow. The number of columns on financial statements has also been increased to 24, which means you can report for all 12 or 13 percent in the year plus a final total.

cable that links the laptop to a desktop, and this makes the package a little frustrating for those who expected an alternative shell. Wordstar Inc. included an order form for the \$40 cable but really should have thrown it in.

On-Time

This was my favorite program in the bundle. This is a management helper that toggles quickly between other applications. For instance, you could be using Wordstar and then for the hot minute get back in your calendar. Also, you could be working on Wordstar and as there will ring and a message flashes on the screen reminding you of your next appointment. The flexibility of this program allows you to set the frequency of the scheduled event, for instance, daily, monthly, weekly or you don't have to wait in a Monday morning meeting every Friday, you just want it once and the alarm will sound just.

Telemerge

I could not test this program, but it seems to be a typical communications program except that it's limited to Xmodem file transfer protocol. This thoughtful addition to the package would be very appreciated by those who send data through the phone to a host computer.

Mail list

This is a mini-database to manage mail lists. The program is a spreadsheet, saving addresses and phone numbers and printing labels. I borrowed labels from my office since the great day-to-day disaster of 1991 and did not try this feature out. For those of you who are brave enough to use these sticky domains that can wrap around the gate of a printer, or for those with the specialty label-printers, this utility would be ideal.

Will that be to go?

The Wordstar Laptop Collection is a good example by Wordstar Inc. to demonstrate the software needs of a laptop user, and it is a hard job to guess and guess those needs. The package would be a better value if the LapLink cable was included, and if a drawing program and spreadsheet program were included.

Catherine Labonte-Smith is a freelance writer specializing in computers.

Conclusion

It was easy for me to see, "Working Another Life (working hard)." I am pleased to say that statement is still true in version 4.2. AccFax Plus version 4.0 puts AccFax Plus back in the running for the top accounting package. For all my complaints, and grumbling about what I do not like about AccFax Plus, I tell you that for me and for my one who I directly recommend an accounting package to, AccFax Plus is once again my first choice.

This review prepared by George Skala of 58 Software System Corp. (800) 338-0111

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Quicken for Macintosh

by Joe Marler



Product: Quicken (Macintosh Version 1.0)
Publisher: Intuit, 190 Wilson Place, Menlo Park, CA 94025 (650) 351-0800
System Requirements: System 1.2 or later (color 1.3 or later). Mac with at least 128 KRAM. Price: \$49.95.

For those who have yet to be exposed to this incredibly popular software tool, a brief definition: Quicken is primarily an electronic check register-based personal finance package with check-printing capabilities. As brief as that is how it started out right over 10 years ago for the Apple and IBM PC/XT platforms (the IBM version is probably at version 4). According to the July *WardWorld* magazine survey, Quicken for Macintosh has been one of the top 10 best-selling business software products for the past 12 months in March 1991.

For More Than the Home

This Macintosh version, last updated in December 1990, has added features which extend the program's usefulness greatly into the realm of small business. Quicken is not an accounting program per se, nor is it a database or spreadsheet, yet due to its uniquely flexible design it has aspects of these types of financial tools. This is accomplished basically by the ability to define, sort and generate a wide variety of reports based on various categories created by the user.

By way of personal example, the writer uses Quicken as a means of easily and conveniently keeping track of accounts payable and accounts receivable in a business business by entering a date, image, specifying charges, deposits or withdrawals, and matching any one of these with a given category (the categories are completely customizable by the user); the program easily generates the desired report. Budgeting is a breeze with Quicken, e.g., tracking expenditures, managing recurring payments, even comparing actual versus projected expenditures. Many of the reports generated by Quicken can become the basis for sophisticated bookkeeping by your accountant, or can be exported as ENLAF format to more powerful programs like Excel, or to text format for use in a word processor, for preparation of a financial statement or the like.

Help at Tax Time

Quicken also has the capacity to organize and format data in categories for export to MacTax, a U.S. income tax preparation software package, substantially of little use to Canadian users, so according to the examples given in the manual, MacTax (or apparently a dedicated in the U.S. tax system) is still to be used. Technical support failed to confirm any support for Canadian tax preparation via MacTax (Intuit, the sort, report and export utilities of Quicken can save considerable time and manual calculation in preparing financial data for your annual filings in Revenue Canada).

I, for example, have found it invaluable in getting a handle on expense deductions of various kinds, and capital cost allowances. Even whose needs are quite disparate may each find creative possibilities of the program that ease their unique financial reporting needs. While not a substitute for an accountant or full-fledged accounting package, particularly if you have a complex business, Quicken certainly helps in the way a general overview through the financial reporting needs with ease.

Quicken can also be used as a personal accounting system which not only calculates but prints the paystubs. There is an amazing degree of flexibility in such a seemingly general area.

The Downside

In three bad words—unfortunately there is. First there is the manual, which is too often plain English, avoiding accounting jargon, but it is so ploddingly written that I found myself losing patience in wading through the minutiae of irrelevant detail to get to the material I sought for accomplishing a particular task.

Quicken's interface is not particularly slick-like. For example, in standard Mac programs, a double-click around a button activates the default choice that can be made by hitting Return or Enter rather than clicking with the mouse; in Quicken, hitting either of these keys during such a clicking box event is more likely to cancel more you to another field on the dialog box.

Though in part a sort/printing tool, Quicken does not have a fast menu, but rather has buttons rather than menus if you are using a three-button, or the default fast (usually Command) if you are using a dual-button format. Intuit's literature says Quicken can print checks "to most printers" but direct software support is built into the program only for the Apple LaserWriter or LaserWriter printers. All other printers and printer drivers must be individually configured by the user by manipulation of a "think any" file in accordance with a complex set of instructions provided with the program.

Even after completing the tedious task, the user will discover that using

Continued on page 68

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Just Write is Just Right ...Just Ask Goldlocks

by Catherine Goldlocks-Smith

Product: Just Write: Fast and Easy Word Processing for Windows
Manufacturer: Spectrum Corp., 10001 Town Drive, Cupertino, CA 95014, (415) Telephone: (408) (415-2400) Software Office: 531-0014 Contact Person: Stephen Dyer
System Requirements: IBM PC (386) 500 or equivalent; 1 Megabyte (at least 1.5MB) free 3.5 or higher disk 3.5 in. HD; mouse (optional); Windows 3.0 or higher; one floppy disk and hard disk, a mouse (optional). Recommended system: IBM PC compatible
Key Features: A Windows 3.0 word processing package with all the features of the other word crop of Windows word processors, plus some extras.
Price: \$79.95

One day at Three Bears Inc.

Goldlocks sat in the modest computer work station in the home office of The Three Bears Inc., her desire to slip her legs under the tiny deskling as she opened up Windows 3.0. Goldlocks began to play with Windows Write. "This word processor is too small," she said. She moved to the next work station, climbed into the very large ergonomic chair and booted up the computer, her legs draped comfortably as she moved the mouse to open up Word for Windows.

"This word processor is too big," she complained as she tried to figure out the menu language. She released the hydraulic lift on the chair and reached the ground once again. There was one more work station to try.

"This chair is just right," she said as she sat in the comfortable chair with the silver casters. She was pleased by the many steps of the word processor found on this computer and quickly opened it up. The laptop computer her story. "Serving Perridge Just Right." Goldlocks was amazed that she could make the text appear on the screen in color, no dot-matrix and text for the word HIDE, blue text for the word cold, and orange text for the word JUST RIGHT.

"This word processor is just right," she said, and it was. It was Just Write by Spectrum.

Goldlocks finished her article and

was spell-checking it when she heard the door burst at the door. She quickly saved the article to a disk in Word 3.0 format and slipped out the front green slippers. She was pleased to find that her file contained perfect text for her favorite character-based word processor.

Another Sapling in the Windows Family Tree

With so many word-processing packages in the Windows forest now, how does a new one make itself distinctive from the other saplings? For starters, the package is contemporary, the look is intelligent, and there are two main novelties: the reference tool the second tree mechanic, compact and easy to right, and overwriting-based and not replacement-based. Just Write's interface looks identical to other packages like Word for Windows, however when began to explore the pull-down menus, I found some bright differences, but there is a color similarity across the board, too easily through the color of text. There are up and down arrows used to options boxes to click on with the mouse, that means more reaching for the keyboard.

Just Write has friendly extras, the when you go into the program it automatically opens up the file you have been working on previously, and it automatically inserts your name and all the templates which is very handy.

I would recommend this program for the cost price business, home office executive, or solo entrepreneur. What makes this program so interesting is to people who must maintain an office by themselves is the full palette of features. In particular the business templates included in the package make you look very good to clients. At Windows word-processing packages now include templates, but Just Write has the most impressive variety I've seen yet, from simple but classy office memos, to formal business formal resumes, reports, proposals and business plans. These style sheets enhance business as little that.

A Full Bowl of Perridge

Just Write gives the user a full bowl of perridge with all the standard features

(Continued on page 72)

Quicken continued from page 47

a non-password printer the program does not support Adobe Type Manager for printing high resolution text, precluding instead a screen resolution format.

Quicken provides for a field in the checks printing area where the user can provide an ink icon and/or text. Even though Intuit made a special effort to eliminate what be printed at Times Roman by a FontShop printer, the old Gold does not support FontShop graphics, only MacFont Bitmap or MacDraw-type PICT format, which can be created by a HyperCard-based drawing program

that comes in the Quicken package again without a proper Font menu (fonts are chosen from an unlabelled entry marked "text style"). It seems clear that much of the program was ported on the Macintosh platform from the DOS version with little change.

An Intuit spokesman reports that release of Quicken upgrade, version 1.0 is imminent and will correct these shortcomings, as well as adding more new features. Upgrade policy has not been set at press time, but the spokesman indicated that for point upgrades, registered users could upgrade for \$25.00.

Joe Winkler is Director of Computer Resources Services, a consulting and computer consulting company in Boston, MA.

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WordPerfect continued from page 8. Most such as the deletion or highlighting of the wrong characters and characters at the right margin position. Sometimes, text was not inserted or deleted at the insertion point, but rather a few lines or words away. This condition also occurred periodically when an insert command was applied within a document. It is surprising and unfortunate that this serious bug slipped by the program's beta testers.

Another problem happens when a section of text is transferred to a graphics object, as in the case of copied or pasted text. If such a document is saved as WP 5.1 format (according to WordPerfect support representatives, this is the recommended method for exporting WordPerfect documents to other applications) and then imported back into the program, not only is the graphics text's character spacing and

font information not accurately lost, but attempts to change font definitions or sizes in the graphics object caused the program to crash 100% of the time on a plain-vanilla Mac II running System 6.05 with no fonts or other unusual circumstances. This is clearly a serious bug that, according to WordPerfect Tech support, doesn't occur if the file is instead loaded into the Word version of WP 5.1 and saved out again. One wonders why the Mac version doesn't just even in that format to start with.

A smaller annoyance happens when a complex graphic is placed on a page, and text below it is adjusted, such as inserting or deleting a carriage return. In that case, even though the graphics is not moved or otherwise disturbed, the entire screen is refreshed each time the lower portion is reformatting. This problem does not occur in either MS

Word or PageMaker 4.0, but is symptomatic of the sloppy programming found in other versions of the program.

While the program's layout features in a welcome addition (MS Word uses a cheap add-on in the form of the Wordfinder desk accessory), I was appalled to discover that WordPerfect's thesaurus does not include common words like MAKING or WATCHING—both present in many other thesaurus I've seen, including the one in Microsoft's for the IBM and Atari ST. Typing one of these words into the Mac version produces only a "Word not Found" beep, whereas the other versions of WordPerfect beep up the most word in their thesauri.

I noticed a surprising variance in the size of files created by the program's different SAVE AS... options. For example, the file shown in Figure 1 (a total of 82 characters) was a mere

(7) 3 kilobytes when it was in IBM WP 5.1 format (including the related text). When saved as WPF's native format, the same unformatted file occupied a whopping 158K of disk space!

While attempting to install some macros, I was notified to discover that the "Hidden Macro" file selector dialog was unable to find a folder starting with the letters "WP" (or anything further on in the alphabet) than I had placed on my desk. The program's regular OPEN and SAVE dialogs had no problem finding the folder. Reexamined everything else (i.e., ignored WPF), the folder was visible to the Macro function. It seems that "WP" is the last folder the Load Command and Macro Functions can find.

If a document is open with a small amount of unedited macros and another not so opened with a large amount of macros, the MACROS menu will con-

Continued on page 51




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by David Rogers

The HP 95LX Palmtop is quite impressive! Two things strike you right off the bat. First, it's much smaller than it looks on the ads.

Second, it's smooth, much lighter than you would imagine. It measures 6.9 inches wide, 5.4 deep and 1 inch thick. The weight is only 1.1 ounces. To add to the sleek, the thing is a full-featured IBM PC XT/1 I was using a real IBM XT just a few days ago, and it weighed a lot more than 1.1 ounces! Unbelievable, right? Well, there is a price to be

paid for the small size, the keyboard is almost unusable for lengthy typing, the screen is clear and sharp, but it isn't backlit and relies on reflected light for illumination (important LCD - 64-line by 48 characters). The limitations of the HP 95LX are not so much in the design of the machine as in the design of our fingers and eyes.

1-2-3 in ROM

The Palmtop is built around a 68000 processor and runs a full version of Lotus 1-2-3. It comes standard with 512 KB of RAM, and contains a full version (2.2) of Lotus 1-2-3 built into ROM. In

addition to Lotus it has a personal information manager, a HP financial calculator and data communications programs also built into ROM. There's even a game library in called "Tigerfun" Also, a 512 KB of RAM is not enough, there is a RAM card slot for an additional 512 K.

The HP runs on two AA size batteries or an AC adapter. In addition there is a lithium backup battery in it (something the Atom Palmtop lacks, hence from). The chance of losing data in a dead battery are fairly slim. Importing/exporting data and programs to and from the 95LX is as simple as plugging in the HP F1044A Connectivity Pick cable (sold separately), loading a communications program (providing), and that's it. Something that takes a lot of getting used to is that all the applications on the HP 95LX are always open. When you turn on the machine, you are presented with the exactly the same screen as when you last accessed it. By pushing any of the application buttons you are moved to that application which is in exactly the same position as you left it. One design aspect to the connector is that the cable is compact - no huge multi-pin connectors on the palmtop itself, just a small four-pin male connector. The other end of the cable is a standard 25-pin serial connector. This can be attached to a printer as well. There are buttons along the entire length of the Connectivity Pick cable in a region of the connector which is visible on the HP. This means that data stored on the HP can be moved onto a personal PC on the same form, and maintained on other machines without fussing with the file structure.

In addition to Lotus it has a few other applications; an appointment book, a telephone book, a memo pad, a file manager, a data communications program of built into ROM. On top of that, there is online help. Then for all the little extras.

The manual is very complete and offers detailed descriptions of all aspects of the machine and software.

The Price of Portability

There is a price to be paid for the small size. The keys are unsuitable for lengthy typing, although screen is clear and sharp. Finally, the screen support of the HP 95LX is that, unlike the Proprietary PC or the Atom Palmtop, this machine is really like an open check book, and doesn't look like your carrying a checkbook. It fits all the great time a secretary, engineer or business person would likely want in their pocket. The downside is that in a portable word processor, it would not be suitable, as the keyboard is almost completely unusable to type on for any amount of time.

The HP 95LX is really an extremely powerful "pocket-calculator" and should be given serious consideration if you are in the market for a truly pocket-sized computer. If you are looking for an electronic phone directory, the HP is essential. If you're looking for a lighter-than-air laptop, this is not for you. It is a pocket-sized device which has the best of both worlds.



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DOPPLER COMPUTER CENTRE

Discount
HARDWARE

"The Full Service Hardware Centre"



288 Mega 18"
Video: VGA Super
RAM: 10, 20, 30, 40 MB



288 VGA Color Monitor
1600x1200, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800, 810, 820, 830, 840, 850, 860, 870, 880, 890, 900, 910, 920, 930, 940, 950, 960, 970, 980, 990, 1000, 1010, 1020, 1030, 1040, 1050, 1060, 1070, 1080, 1090, 1100, 1110, 1120, 1130, 1140, 1150, 1160, 1170, 1180, 1190, 1200, 1210, 1220, 1230, 1240, 1250, 1260, 1270, 1280, 1290, 1300, 1310, 1320, 1330, 1340, 1350, 1360, 1370, 1380, 1390, 1400, 1410, 1420, 1430, 1440, 1450, 1460, 1470, 1480, 1490, 1500, 1510, 1520, 1530, 1540, 1550, 1560, 1570, 1580, 1590, 1600, 1610, 1620, 1630, 1640, 1650, 1660, 1670, 1680, 1690, 1700, 1710, 1720, 1730, 1740, 1750, 1760, 1770, 1780, 1790, 1800, 1810, 1820, 1830, 1840, 1850, 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Home Market Applauds HeadStart

Since ANO began carrying the HeadStart total home / small business computer package in May of 1991, it has quickly become a hot seller. The driving force behind its success is that it is a complete system.

And we mean complete. Aside from the VGA colour graphics and hard disk, each HeadStart comes bundled with a 480MB CD-ROM drive, a modem, a mouse, and over 52 applications programs.

Some of the highlights of the software library includes Encyclopaedia, PC Globe, Microsoft Bookshelf, Mavis Beacon Teaches Typing, Quattro 1.0 Spreadsheet, Q&A 3.0 (word processor and data base), and Publish-It! (desktop publishing).

For potential personal computer users who are located in remote regions and have been reluctant to purchase a system, Philips includes 1-800 support for every system. We've tested out their support personnel and believe we're top notch. The knowledgeable gentleman on the other end of the phone gave us the type of support all manufacturers should provide.

If you're considering getting a system for the kids or small business the HeadStart line is definitely worth looking into. Priced at \$ 2,850 for the 386ix and \$ 2,420 for the 286 it certainly won't hurt the pocketbook either. 

Deal Inked

ANO To Carry Canofile

Preliminary negotiations with Canon Canada Inc. have resulted in the marketing of the Canofile 250 desktop electronic filing system by ANO Office Automation. The Canofile product is revolutionary in that it provides a cost effective solution to document management. Unlike other electronic document management systems costing upwards of \$ 100,000 the Canofile weighs in under \$ 15,000.

"This is the first time the Canofile is being offered through a systems dealer", explains Mr. Glen Cunningham of Canon, "Our relationship with ANO has been so successful in the past, it just seemed natural to let them market it."

The Canofile 250 will be featured in September at Market Discover '91, and the Vancouver Business Computer Show. Readers of ANOVATION can look forward to a full length profile in the September issue. 

Innovation

Zenith Breaks Barriers

Zenith Data Systems has always been an innovator of leading edge technology. Their involvement with the EISA "gang of nine", the ACE consortium, and MPC (multi-media) is an indicator of how committed they are to technology.

Advancing technology is fine and dandy but the computer industry changes too rapidly to let outdated product carry the bottomline. Except for the odd new product, Zenith

Data Systems has been relatively quiet since the take over by Groupe Bull in 1989.

Continued on Page 2



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Zenith Continued . . .

Quiet to the outside world, maybe, but working diligently on bringing Zenith back to the forefront in portable computing technology. This is reflected in their 5 new portable products unveiled at this year's Spring Comdex. The most notable offerings include the first battery-operated 486 and 486sx portables, and the first portable based on the Intel 386SL processor.

The 386SL is already being heralded as one of the most technologically innovative products since the battery-operated Zenith SuperPort.

ated Zenith SuperPort.

What makes the MastersPort/SL so unique is its ability to last an average of 8 hours on a single battery charge. Not too shabby considering the average portable lasts anywhere from 45 minutes to 3 hours with average use. Since you can leave it on for three weeks without having to recharge, the unit doesn't have an ON/OFF switch. And once it does run out of juice, it only takes an hour to recharge to full load.

"Anybody who thought Zenith Data Systems was dead in the water is sadly mistaken. The SL, our 486 portables, and our participation with the ACE Consortium truly reflects a company on the move," proclaims Kosta Chatzopoulos, Director of Sales & Marketing for Zenith's Reseller Channel at a recent open house at the new Vancouver facilities.

For information and availability, please contact the AND office closest to you.



The 2-486/387 server is big on network expansion and performance.

AND 100

In other news from ZDS, two new LAN oriented products have been released - an incredibly potent LAN file server, and a space saving LAN workstation. The server is based on the EISA architecture with a powerful RADE 5 SCSI disk subsystem, while the low profile workstation houses an Intel 166MHz 386sx processor. Both are currently shipping.

AND

Connectivity

Novell Revamps Network

Novell Inc. of Provo, Utah recently revamped its Network product line. The move includes a name change of its 386 network operating system from Network 386.3.1 to Network 3.11, and the merging of the four ELS and Advanced products to Network 2.2 - with some major and minor additions added to both product lines.

"This certainly makes our job and the customer's buying decision easier," explains Carmine DiMarco, Manager of AND's Network Information Systems Group. "Even though Network is the number one PC based network OS on the market (50%+ share), this can only make it a stronger product."

One reason why many small businesses avoided buying into Network was out of sheer confusion. Although upgrades were available from one level to the next, each offered such a wide range of features and advantages, the upgrade path offered little comfort. By making 3.11 and 2.2 completely different, selecting a version is cut and dry - you either need one or the other.

For users that already have invested into ELS, Advanced, or 386 an upgrade is available directly through Novell. If purchased after April 1, 1991 the upgrade is free (until September 30, 1991), otherwise you should contact Novell at 1-800-NETWARE.

AND

Cost Effective

ANO Unveils Business Class For Economy

The signature of ANO Office Automation has always been affordable product backed by a powerful service network. On May 31, 1991 this was taken one step further with the introduction of the Business Class line of personal computers.

Priced for the budget conscious user, the Business Class line ranges from a slim line 286 based network station, all the way up to a powerful tower IBM A 33MHz 486. One of the most flexible lines of personal computers on the market, each system is configurable to any users needs.

Talking about this new line of PCs Mr. Toby Chu, CEO of ANO Office Automation was at no loss for words,

"As a multi-million dollar company installing into major government, edu-

cational, and international corporate accounts we cannot afford to let garbage walk out our doors. Which is why computers bearing the Business Class logo will set a new standard for cost effective computing. A standard which our competition will be hard pressed to duplicate."

Info indications from the market have been overwhelming. Historically, sales figures tend to drop 30% below the monthly mean during June. This year, however, sales dropped a meagre 5% from the monthly average. Significant evidence that the Business Class will be the one to watch for 1991.



ANO

Tech Talk with Ken Ng

Video Memory

Q. What does additional memory on a VGA video card do?

A. Video memory is similar to memory in a laser printer in that it doesn't improve speed, but simply what it is capable of producing.

Let me explain, on a laser printer the amount of memory dictates the amount of graphics it is capable of printing on one page. With a video-card it means the number of colours it is capable of displaying on the monitor at one time (see Figure 1.1). The advantage to more colours is that at higher resolutions the picture is more realistic. Of course the software you use must also support the video card and its extended resolutions.

ANO

Memory	1024 x 768	800 x 600	640 x 480
256K	4	16	14
512K	16	256	256
1MB	256	256	32,768

Figure 1.1 shows how various video modes are affected by the amount of video memory on an ATI Wonder Plus XL card.

Helping Hand

Employee Purchase Plans

The personal computer has meant a massive shift in the employment market. Companies that are automating for the first time, or are shifting to newer automated systems are often forced to either spend a lot of money on training or look elsewhere for help.

One way to avoid this dilemma is by having PCs in the employees' homes. This has other side benefits such as reduced employee turnover, easier acceptance of new technologies, the ability to promote within, and bulk buying discounts.

In this article we will give you some ideas on how to implement an employee purchase plan (EPP). Through proper implementation an EPP can prove profitable for everyone who's involved.

STEP 1

Before anything else a group of people (an odd number is preferred) should be relegated the responsibility of organization. Since EPPs are very time consuming it is best if the responsibilities are broken down. Also, the people involved should be relatively knowledgeable about computers and the market place.

By having a group of people you will also be reducing any biases towards one particular vendor. The successful vendor should be selected on their merits and ability to service the new computer users.

STEP 2

The next step is to present management with a proposal. Offer various options on how you plan on implementing such a project. The most significant variable to the company of course is what it will cost them. Many organizations offer subsidies in the form of interest free loans, reduced interest rate loans through a banking institution via a guarantee by the company, or a subsidy directly from the company such as 10% - 50% of the purchase cost. Be sure that you outline the importance of this project and that it is more of an investment than an expense.

STEP 3

After the finance portion has been moved out, it is time to petition the employees. Be sure to include an area in your petition for the type of equipment they would be interested in and

the amount of money they would be willing to spend. The information you collect will be vital when approaching computer vendors for pricing.

STEP 4

Approach at least 5 different vendors with your proposal. Be sure to give them as much information as possible, and expect in return a good deal more information.

Aside from pricing, you should also get some information on the following:

1. Years in business;
2. References from other companies they have done EPPs with;
3. Support policy;
4. Training options;
5. Return policy;
6. Number & quality of support staff;
7. Shipping arrangements;
8. Terms of the sale.

Don't leave anything out. Forgetting something could lead to headaches in the long run.

STEP 5

One of the most dangerous things about evaluating a vendor (especially when in a remote location) is that anyone

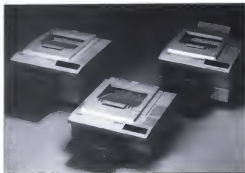
Continued on Page 6



EPPs can save an organization money by helping to reduce training & re-training costs.

Time Saver

The Dueling Bins



Many offices already enjoy the numerous benefits of operating Canon laser printers. Scalable and rotatable fonts, flexibility of paper handling, simplicity of use, low maintenance costs, and crisp sharp characters and graphics every time. Flexibility of paper handling, in a high volume office or in a networking environment, is the biggest consideration when evaluating laser printers.

The Canon dual Bin Printers offer just that - flexibility. They save time while doing more. Stalling a printjob while finding some way to change from letter to legal paper, or to print the envelope alongside the letter is a thing of the past with the LBP-8 Mark IIT and IIR. Now the power of Canon's CaPSL language, an 8PPM Canon Engine, 32-bit processing, and dual bin technology are bundled together to ensure the job is done easily and done on time.

LBP-8 MARK IIT

The Canon LBP-8 Mark IIT offers dual paper cassettes that together hold up to 400 sheets. You can choose between letter, legal, executive, A4 and envelope trays and use them in many combinations, with letterhead and white, or for legal sized spreadsheets and executive sized memos. This solution also takes up no more deskpace than Canon's LBP Mark III 8PPM Laser.

LBP-8 MARK IIR

Looking for that extra edge on the competition while saving some money? The Canon Mark IIR offers professional-looking, cost effective printing with the added convenience of duplex printing - printing on both sides of the paper. No longer do you have to waste time trying to figure out how to flip your documents over manually to print on both sides. When you start printing on both sides of your paper you slim weighty documents, lighten mailing costs, and eliminate the irritation of long thick reports.

VIRTUALLY MAINTENANCE-FREE

As with the entire line of Canon laser printers, maintenance costs are kept at a minimum by using an all-in-one disposable EP cartridge system. Essentially the drum, developer, and toner are combined in an easy to install cartridge. Every time you replace the EP cartridge the printer is virtually brand new again.

If you have been looking for a printer to handle high volume or to attach to your LAN the Canon LBP-8 Mark IIT and Mark IIR are definitely worth checking into.

Long Awaited

DOS 5.0 Is Here

In the December 1990 issue of ANOVATION we announced that Microsoft was working on DOS Version 5.0. This latest and probably the greatest release is now on the shelves and shipping in full force.

What makes DOS 5.0 so much different from earlier releases, was Microsoft's commitment to the needs of the end users. We wanted more base memory to run applications - they delivered with flying colours. We wanted a help function for command sequences - they delivered. We wanted task switching - they delivered. We wanted useful utilities - they delivered. And they continued to deliver with a new improved BASIC programming language, a built in text editor, and a looser manner OS.

For most users the biggest advantage will be the freeing up of base memory. On a 386 system with nothing loaded but the COMMAND.COM as much as 627K of base memory is freed up - a far cry from DOS 3.2 and 4.01. This additional memory will make network administrator's and power users work a lot happier.

AND

Helping Hand

Employee Purchase Plans Continued . . .

can look good on paper. If at all possible try to visit each vendors office or get some photographs. Sometimes the best price is not always the best value. You want a vendor who has not only been around awhile but one which will be there in the future.

STEP 6

Take special care in deciding on what equipment to go with. Although most PCs pretty much look the same from the outside it is the insards that are important. On some brand systems such as Philips/Magnavox, AST, Zenith, and Samsung, quality is not an issue. However, the so-called clones require a little more thought.

With a clone, take special care to assure you are getting good value for your money. Sloppy workmanship and a poor grade of components will lead to a lot of unhappy employees should you make the wrong decision.

If at all possible set aside a week for the vendors to demonstrate their products when it is most convenient for the employees - one day for each vendor should suffice. If this is not possible, have the vendors send up sample systems and peripherals for display

STEP 7

Once everything has been selected and it is time to put the deal together, have the successful vendor provide you with a generic order form for the employees to fill out. This will make life much easier for both the vendor and yourselves.

IN SUMMARY

In summary, here are the steps in preparing an EPP:

1. Form committee (3 or more preferred).
2. Prepare proposal for the company.
3. Petition the employees.
4. Solicit proposals from

vendors;

5. Evaluate vendors merits;
6. Evaluate products;
7. Order equipment;

EPPs are an excellent opportunity for both the company and its employees. Taking the time to do it right will make all the difference in the world.

AND

**"Sometimes
the best price
is not always
the best
value"**

New Products

In With The New

AST Research of Mississauga, ON recently released three exciting new desktop products. The most important being a Premium II system based around latest new 486sx processor.

PREMIUM II 486sx/20

What makes the 486sx processor different from the standard 486 processor is the absence of a math co-processor. By removing the co-processor, Intel was able to provide a solution for the business user that doesn't require floating point functionality. A 487sx co-processor is available as an upgrade feature for those who may need it in the future.

Although it is only operating at 20MHz the 486sx is reported to be between 30 to 40% faster than a 33MHz 386 system. This is accomplished through an 8K on-chip cache, and various other enhancements.

Networking Windows

LANtastic 4.0 Adds Windows



Artisoft Inc. of Tucson, Arizona, has recently begun shipping version 4.0 of their award winning LANtastic peer-to-peer network operating system. One of the biggest advancements with this new release is the addition of support for Windows 3.0 support in all three modes on either the server &/or

AST's Premium II 486sx system is definitely worth taking a look at. Standard features include 2MB of RAM, an on-board VGA adapter, and of course full CUPID-32 upgradeability should one need to move up to a 486/33 or 586.

NEW BRAVOS

AST is revamping its Bravo line of inexpensive workstations by replacing the 286 and 386sx systems with a 16MHz 286 and a 20MHz 386sx. Aside from the processor changes, other enhancements have been made, including an on-board VGA adapter, memory expandability to 16MB on-board, the ability for the 286 to be upgraded to a 20MHz 386sx via a plug-in module, and a slightly larger chassis.

These new systems are priced very competitively, making them an excellent solution for network nodes.

AND

AND

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AND

Lights Out

By Todd Wiles (Jrakes)

In previous issues we have made mention of Uninterruptable Power Supplies. This was not intended to scare you into investing in one, we were simply pointing out the facts.

New facts are nice, but real life stories are something completely different. They are reality. And believe you me I have been witness to reality on more than one occasion - twice in our office and twice at customer's sites.

Just recently, on a beautiful sunny June day, I was working on a

feature article for a future ANOVATION newsletter when all of the power cut off. Of course I lost anything that hadn't been saved since the last backup (which only amounted to about 3 minutes). The UPS attached to our Novell file server, however, kept the system running beautifully until our administrator could get to it to do a shutdown and turn it off. Without this little piece of hardware I don't know where we would have been - a corrupted file system is a definite possibility.

Now I'm not preaching, but anyone with a network that is without some form of backup power protection is asking for trouble. According to statistics, power is the major cause of system failures. A

UPS is more than an expense, it is an insurance policy.

I would personally recommend the American Power Conversion (APC for short) line of products. They have everything from a UPS for a stand alone station, to a big gun product to handle the heavy workload.

Take it from me it only takes one incident to appreciate the true value of a UPS - for some of us we get to experience it four times. Guess you can imagine how appreciative I am.

AND



Reader Response Card



Contact: _____
 Position: _____
 Company: _____
 Address: _____
 City: _____
 Prov: _____ Postal Code: _____
 Phone: _____ Local: _____
 Fax: _____

Please send me ANOVATION monthly: ☐
 Please have an AND Rep contact me: ☐
 Please send me more information on:

Head Start

Canofile

Zenith Lam Products

Business Class PC's

Lantronic 4.0

Zenith Lap Tops

Canon Laser Printers

DOB 5.0

AST Desktop PC's

APC UPS's

Suggestions: _____

**STAPLE
 BUSINESS CARD
 HERE**